

Durham University Faculty Handbook Online www.durham.ac.uk/faculty.handbook/

These programme regulations should be read in conjunction with the University's <u>core regulations for</u> <u>undergraduate programmes</u>, and the <u>marking and classification conventions for undergraduate programmes</u>.

# MSci Natural Sciences (FGC0); MSci Natural Sciences with Placement (FGC1)

- 1. This programme is available at Durham City, in a full-time mode of study.
- 2. The MSci in Natural Sciences allows candidates to take modules from two or more subjects in a four year programme.
- 3. The range of modules is limited to Anthropology, Biosciences, Business, Chemistry, Computer Science, Earth Sciences, Economics, Education, Geography, Mathematics, Sport, Philosophy, Physics, Psychology and languages offered by the University's Centre for Foreign Language Study.
- 4. Candidates are allowed to take modules from a single subject in the final year if they have the appropriate prerequisites.
- 5. This programme is available at Durham City, in a full-time mode of study.
- 6. All module selections must be approved by the Director of Natural Sciences or by their nominee and be timetable compatible.
- The degree certificate issued to successful candidates who have not taken an MSci Joint Honours degree shall list in alphabetical order all subjects in which they have taken at least 40 credits during the final three levels of the programme.
- 8. Candidates may take no more than 20 credits delivered by the University's Centre for Foreign Language Study in Levels 1 and 2.

#### Level 1 (Certificate)

- 9. Candidates take modules: from at least two subjects; from not more than four subjects; to a maximum of 80 credits per subject. The selection must include at least one subject in which Level 4 modules are available.
- 10. Candidates may take no more than 20 credits of language modules offered by the University's Centre for Foreign Language Study.

#### Level 2 (Diploma)

- 11. Candidates take modules: from at least two subjects; from not more than three subjects; with at least 40 credits each in at least two subjects; to a maximum of 80 credits per subject. The selection must include at least one subject in which Level 4 modules are available.
- 12. In accordance with the core regulations, candidates are normally permitted to study Level 1 modules up to the value of 30 credits.
- 13. Candidates may take no more 20 credits of language modules offered by the University's Centre for Foreign Language Study.

#### Level 3 (Degree)

- 14. Candidates take modules: from at least two subjects excluding Natural Sciences coded modules; from not more than three subjects; to a maximum of 100 credits per subject. The selection must include at least one subject in which Level 4 modules are available.
- 15. In accordance with the core regulations, candidates are normally permitted to study Level 2 modules up to the value of 30 credits;

#### Level 4 (Degree)

- 16. Candidates take modules from at least one and no more than three subjects to a maximum of 120 credits per subject.
- 17. In accordance with the core regulations, candidates must take 120 credits at Level 4.
- 18. At least 40 credits must be taken in a Level 4 research project.

### Placement – Year 3 or Year 4

- 19. Candidates admitted to the MSci Natural Sciences (FGC0) are able to apply to transfer to the MSci Natural Sciences with Placement (FGC1). Students undertaking the MSci Natural Sciences with Placement programme (FGC1) will undertake an approved placement chosen in consultation with the Director of Natural Sciences or their nominee and the host partner.
- 20. Candidates wishing to transfer to the MSci Natural Sciences with Placement (FGC1) as their third year must:
  - a. Have successfully completed Level 1 of the MSci Natural Sciences (FGC0) and progressed to Level 2 of the Honours 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 Natural Sciences with Placement (FGC1) 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 so as to be eligible to progress to Level 3 of the MSci Natural Sciences (FGC0) Honours programme.
- 21. 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 Natural Sciences with Placement (FGC1). Students who have not made satisfactory progress on the placement will not be permitted to continue on the MSci Natural Sciences with Placement (FGC1) programme, but must instead proceed to Level 3 of the MSci Natural Sciences (FGC0) programme.
- 22. Candidates wishing to transfer to the MSci Natural Sciences with Placement (FGC1) as their fourth year must:
  - a. Have successfully completed Level 2 of the MSci Natural Sciences (FGC0) 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 Natural Sciences with Placement (FGC1) 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 Natural Sciences (FGC0) programme so as to be eligible to progress to Level 4 of the MSci Natural Sciences (FGC0) Honours programme.
- 23. Students who the Board of Examiners for Natural Sciences deem to have made satisfactory progress on the placement will continue to Level 4 of the MSci Natural Sciences with Placement (FGC1). Students who have not made satisfactory progress on the placement will not be permitted to continue on the MSci Natural Sciences with Placement (FGC1) programme, but must instead proceed to Level 4 of the MSci Natural Sciences (FGC0) programme.

#### **Joint Honours**

- 24. Within the Natural Sciences programme certain combinations of modules will be known as Joint Honours degrees. Candidates who follow these combinations of modules will be awarded a specific title for their degree.
- 25. Candidates who follow an approved Joint Honours degree will be awarded an MSci in A and B within the Natural Sciences programme, where A and B are replaced by the approved subject titles with the exception of those entering Durham University on or after October 2023 where A and B are one of:
  - a. Computer Science and Mathematics
  - b. Mathematics and Physics

In which case they will be awarded a MSci Honours in A and B. In cases (a) and (b) these degrees will have new distinctive programme code and candidates satisfying the Joint Honours criteria are permitted to transfer to the new relevant programme.

26. In order to qualify for the degree MSci in A and B within the Natural Sciences programme, candidates in Levels 2, 3 and 4 normally study modules from two subjects. Candidates must select not less than 160 and not more than 200 credits from each of the two subjects during the second, third and fourth levels of the programme. In Level 3 candidates may, with the agreement of the Director of Natural Sciences, replace 20 credits which are not compulsory for qualification of the Joint Honours degree with the module Science Enterprise (NSCI 3001).

27. The following MSci Joint Honours degrees are available:

# **MSci Biology and Chemistry (FGC0)**

28. This programme is available at Durham City, in a full-time mode of study.

# Level 1 (Certificate)

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

		Credit value
Genetics	<u>BIOL1171</u>	20
Molecules and Cells	<u>BIOL1281</u>	20
Core Chemistry 1	<u>CHEM1078</u>	30
Practical Chemistry 1A	<u>CHEM1087</u>	10

30. Candidates shall also study and be assessed in 40 credits from List A:

List A:		Credit value
EITHER		
(Linear Algebra I AND	<u>MATH1071</u>	20
Calculus I)	<u>MATH1061</u>	20
OR		
(Single Mathematics A AND	<u>MATH1561</u>	20
Single Mathematics B)	<u>MATH1571</u>	20
OR		
Mathematical And Experimental Tools Required In Chemistry	<u>CHEM1111</u>	20
20 credits of module(s) from those subjects listed in Paragraph 2		20
of the BSc Natural Sciences programme (CFG0) regulations		

31. Candidates wishing to study for an accredited degree must study and be assessed in the following modules:

		Credit value
Introduction To Materials Chemistry	<u>CHEM1127</u>	10
Practical Chemistry 1B	<u>CHEM1107</u>	10

## Level 2 (Diploma)

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

		Credit value
Core Chemistry 2	<u>CHEM2012</u>	40
Structure and Reactivity in Organic Chemistry	<u>CHEM2087</u>	10
Practical Chemistry 2 - Synthetic	<u>CHEM2147</u>	10
Molecular Biology	BIOL2441	20
Metabolism	BIOL2491	20
Cell Signalling	BIOL2501	20

## Level 3 (Degree)

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

		Credit value
Bioactive Chemistry 3	<u>CHEM3211</u>	20
Advanced Biological Chemistry	<u>CHEM3241</u>	20
Advanced Organic Chemistry	<u>CHEM3117</u>	10
Practical Chemistry 3 – Synthetic	<u>CHEM3447</u>	10
Biochemistry and Biotechnology	BIOL3601	20
Stress and Response to the Environment	BIOL3491	20
20 credits of available modules from Level 3		
(including the Biosciences (BIOL) list and		
Science Enterprise	NSCI3001	20
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## Level 4 (Degree)

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

		Credit value
Workshop	<u>BIOL4111</u>	20
Biochemistry Research Project	BIOL4022	40
Frontiers in Molecular Assembly	<u>CHEM4311</u>	20
Bioactive Chemistry Research Project	<u>CHEM4272</u>	40

# **MSci Biology and Physics (FGC0)**

35. This programme is available at Durham City, in a full-time mode of study.

# Level 1 (Certificate)

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

		Credit value
Genetics	<u>BIOL1171</u>	20
Molecules and Cells	BIOL1281	20
Foundations of Physics 1	<u>PHYS1122</u>	40

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

EITHER		Credit value
Linear Algebra I AND	<u>MATH1071</u>	20
Calculus	<u>MATH1061</u>	20
OR		
Single Mathematics A AND	<u>MATH1561</u>	20
Single Mathematics B	<u>MATH1571</u>	20

# Level 2 (Diploma)

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

		Credit value
Molecular Biology	BIOL2441	20
Development	BIOL2471	20
Cell Biology	BIOL2481	20
Foundations of Physics 2A	<u>PHYS2581</u>	20
Mathematical Methods in Physics	<u>PHYS2611</u>	20
Discovery Skills in Physics	<u>PHYS1101</u>	20

#### Level 3 (Degree)

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

		Credit value
Advanced Cell Biology	BIOL3481	20
Advanced Topics in Development	BIOL3521	20
20 credits of available modules from Level 3		
(including the Biosciences (BIOL) list and		
Science Enterprise)	<u>NSCI3001</u>	20
Laboratory Skills and Electronics 3	<u>PHYS3681</u>	20
Foundations of Physics 3A	<u>PHYS3621</u>	20
Foundations of Physics 2B	<u>PHYS2591</u>	20

#### Level 4 (Degree)

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

EITHER		Credit value
Project	<u>PHYS4213</u>	60
Workshop	BIOL4111	20
Biophysical Research Project (S)	BIOL4071	20
Foundations of Physics 4B	PHYS4261	20
OR		
Workshop	BIOL4111	20
Biophysical Research Project (T)	<b>BIOL4063</b>	60
Foundations of Physics 4B	PHYS4261	20
20 credits of available modules from the Level 4 Physics list		20

# **MSci Chemistry and Mathematics (FGC0)**

41. This programme is available at Durham City, in a full-time mode of study.

# Level 1 (Certificate)

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

		Credit value
Core Chemistry 1	<u>CHEM1078</u>	30
Practical Chemistry 1A	<u>CHEM1087</u>	10
Practical Chemistry 1B	<u>CHEM1107</u>	10
Linear Algebra I	<u>MATH1071</u>	20
Calculus	<u>MATH1061</u>	20
Analysis I	<u>MATH1051</u>	20
Dynamics I	<u>MATH1607</u>	10

## Level 2 (Diploma)

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

		Credit value
Core Chemistry 2	<u>CHEM2012</u>	40
Properties of Molecules	<u>CHEM2097</u>	10
Practical Chemistry 2 - Measurement	<u>CHEM2157</u>	10
Complex Analysis II	<u>MATH2011</u>	20
Analysis of Many Variables II	<u>MATH2031</u>	20
Mathematical Physics II	<u>MATH2071</u>	20

## Level 3 (Degree)

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

		Credit value
Chemical Physics 3	<u>CHEM3411</u>	20
Computational Chemical Physics	<u>CHEM3151</u>	20
Molecules and their Interactions	<u>CHEM3137</u>	10
Practical Chemistry 3 – Measurement	CHEM3467	10
Special Relativity and Electromagnetism	<u>MATH2657</u>	10
Quantum Mechanics III	<u>MATH3111</u>	20

45. Candidates shall also study and be assessed in 30 credits from those offered by the Department of Mathematical Sciences with at most 10 credits from Level 2 and the remainder at Level 3 (including the Mathematical Sciences (MATH) list and Science Enterprise (<u>NSCI3001</u>).

## Level 4 (Degree)

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

EITHER Chemistry Research Project OR	<u>CHEM4494</u>	Credit value 80
Advanced Research Concepts in Chemistry	<u>CHEM4481</u>	20
Project IV	<u>MATH4072</u>	40
Advanced Computational Chemical Physics 4	CHEM4471	20

47. Candidates shall also study and be assessed in modules from Level 4 Master of Mathematics (G103) regulations.

# **MSci Chemistry and Physics (FGC0)**

48. This programme is available at Durham City, in a full-time mode of study.

## Level 1 (Certificate)

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

Core Chemistry 1

CHEM1078

Credit value 30

Practical Chemistry 1A	<u>CHEM1087</u>	10
Foundations of Physics 1	<u>PHYS1122</u>	40

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

EITHER		Credit value
Linear Algebra I	<u>MATH1071</u>	20
Calculus	<u>MATH1061</u>	20
OR		Credit value
Single Mathematics A	MATH1561	20
Cingle Mathematice / (		20

## Level 2 (Diploma)

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

		Credit value
Core Chemistry 2	<u>CHEM2012</u>	40
Properties of Molecules	<u>CHEM2097</u>	10
Practical Chemistry 2 - Measurement	<u>CHEM2157</u>	10
Foundations of Physics 2A	<u>PHYS2581</u>	20
Mathematical Methods in Physics	<u>PHYS2611</u>	20
Discovery Skills in Physics	<u>PHYS1101</u>	20

## Level 3 (Degree)

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

	Credit value
<u>CHEM3411</u>	20
<u>CHEM3151</u>	20
CHEM3137	10
<u>CHEM3467</u>	10
PHYS3621	20
PHYS2591	20
<u>PHYS3681</u>	20
	CHEM3151 CHEM3137 CHEM3467 PHYS3621 PHYS2591

## Level 4 (Degree)

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

<b>EITHER</b> Project Advanced Research Concepts in Chemistry Foundations Of Physics 4B Advanced Computational Chemical Physics 4	PHYS4213 CHEM4481 PHYS4621 CHEM4471	<b>Credit value</b> 60 20 20 20 20
<b>OR</b> Chemistry Research Project Foundations Of Physics 4B <b>AND</b> modules to the value of 20 credits from List B:	<u>CHEM4494</u> <u>PHYS4621</u>	80 20
List B: Advanced Research Concepts in Chemistry Advanced Computational Chemical Physics 4	<u>CHEM4481</u> <u>CHEM4471</u>	Credit value 20 20

# **MSci Computer Science and Mathematics (FGC0)**

54. This programme is available at Durham City, in a full-time mode of study.

## Level 1 (Certificate)

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

		Credit value
Algorithms And Data Structures	<u>COMP1081</u>	20
Computational Thinking	<u>COMP1051</u>	20
EITHER		
Computer Systems	<u>COMP1071</u>	20
OR Progamming (black)	<u>COMP1101</u>	20
OR Programming (gold)	<u>COMP1111</u>	20

AND		
Linear Algebra I	<u>MATH1071</u>	20
Calculus I	<u>MATH1061</u>	20
Probability I	<u>MATH1597</u>	10
Statistics 1	MATH1617	10

#### Level 2 (Diploma)

56. Candidates shall study and be assessed in:

	Credit value
60 credits of available modules from the Level 2 Computer	60
Science list	
60 credits of available modules from the Level 2 Mathematics	60
list. At most 20 credits may be at Level 1	

### Level 3 (Degree)

57. Candidates shall study and be assessed in

		Credit value
Project Preparation	COMP3591	20
40 credits of Level 3 modules available from the Computer		40
Science list		
60 credits from Level 3 modules (including the Mathematics		60
(MATH) list and Science Enterprise ( <u>NSCI3001</u> ).		

#### Level 4 (Degree)

58. Candidates shall study and be assessed in modules to the value of 40 or 60 credits from List C:

List C:		Credit value
Advanced Project	<u>COMP4013</u>	60
Mathematics Project	<u>MATH4072</u>	40

- 59. Candidates shall also study and be assessed in modules available from the Level 4 Mathematics list to the value of 40 credits.
- 60. Candidates shall also study and be assessed in modules available from the Level 4 Computer Science list to the value of 20 or 40 credits.

# **MSci Mathematics and Physics (FGC0)**

61. This programme is available at Durham City, in a full-time mode of study.

## Level 1 (Certificate)

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

		Credit value
Linear Algebra I	<u>MATH1071</u>	20
Calculus I	MATH1061	20
Analysis I	<u>MATH1051</u>	20
Foundations of Physics 1	<u>PHYS1122</u>	40
Discovery Skills in Physics	<u>PHYS1101</u>	20

#### Level 2 (Diploma)

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

		Credit value
Analysis in Many Variables II	<u>MATH2031</u>	20
Complex Analysis II	<u>MATH2011</u>	20
Foundations of Physics 2A	<u>PHYS2581</u>	20
Foundations of Physics 2B	<u>PHYS2591</u>	20

64. Candidates shall also study and be assessed in modules to the value of 20 credits from List D:

List D:		Credit value
Mathematical Physics II	<u>MATH2071</u>	20
Theoretical Physics 2	<u>PHYS2631</u>	20

65. Candidates shall also study and be assessed in Level 2 modules to the value of 20 credits **EITHER** from those offered by the Department of Mathematical Sciences if 20 credits of Physics are chosen from List D **OR** from those offered by the Department of Physics if 20 credits of Mathematics are chosen from List D.

### Level 3 (Degree)

66. Candidates shall study and be assessed in modules to the value of 60 credits offered by the Department of Physics to include the following modules:

<b>EITHER</b> Foundations of Physics 3A Theoretical Physics 3 (if Theoretical Physics 2 was taken at Level 2)	<u>PHYS3621</u> PHYS3661	Credit value 20 20
2) 20 credits of Level 3 modules available from the Physics list <b>OR</b>		20
Foundations of Physics 3A 40 credits of Level 3 modules available from the Physics list (if Theoretical Physics 2 was not taken at Level 2)	<u>PHYS3621</u>	20 40

67. Candidates shall also study and be assessed in modules to the value of 60 credits from List E:

List E:		Credit value
Analysis III	<u>MATH3011</u>	20
Differential Geometry III	<u>MATH3021</u>	20
Dynamical Systems III	<u>MATH3091</u>	20
Fluid Mechanics III	MATH3101	20
Geometry Of Mathematical Physics III	<u>MATH3471</u>	20
Mathematical Biology III	<u>MATH3171</u>	20
Mathematical Finance III	<u>MATH3301</u>	20
Mathematics into Schools III	<u>MATH3481</u>	20
Operations Research III	<u>MATH3141</u>	20
Partial Differential Equations III	MATH3291	20
Quantum Computing III	MATH3391	20
Solitons III	MATH3231	20
Topology III	MATH3281	20
Science Enterprise	NSCI3001	20

## Level 4 (Degree)

68. Candidates shall study and be assessed in modules to the value of 40 or 60 credits from List F:

List F:		Credit value
Mathematics Project	<u>MATH4072</u>	40
Project	PHYS4213	60

69. Candidates shall also study and be assessed in modules to the value of 40 credits from List G:

List G:		Credit value
Advanced Quantum Theory IV	<u>MATH4061</u>	20
Algebraic Topology IV	<u>MATH4161</u>	20
Functional Analysis and Applications IV	<u>MATH4371</u>	20
General Relativity IV	<u>MATH4051</u>	20
Riemannian Geometry IV	<u>MATH4171</u>	20
Statistical Mechanics IV	<u>MATH4231</u>	20
Superstrings IV	<u>MATH4271</u>	20
Topics in Applied Mathematics IV	<u>MATH4381</u>	20
Advanced Mathematical Biology IV	<u>MATH4411</u>	20
Geophysical and Astrophysical Fluids IV	<u>MATH4421</u>	20

70. Candidates shall also study and be assessed in modules to the value of 20 or 40 credits from List H:

List H:		Credit value
Advanced Condensed Matter Physics	<u>PHYS4151</u>	20
Advanced Theoretical Physics	<u>PHYS4141</u>	20
Particle Theory	<u>PHYS4181</u>	20
Theoretical Astrophysics	<u>PHYS4201</u>	20
Atoms, Lasers and Qubits	<u>PHYS4121</u>	20
Astrophysics 4	<u>PHYS4131</u>	20

PHYS4111	20
PHYS4191	20

#### Assessment, progression and award

- 71. Candidates whose achievement at the end of Level 2 does not qualify them to proceed to Level 3 of their Joint Honours degree MSci A and B in Natural Sciences but who achieve the standard required for progression to Level 3 of a Bachelors programme may progress to Level 3 of an appropriate programme within the BSc Natural Sciences programme in accordance with the Core Regulations.
- 72. A candidate who is qualified to progress from Level 2 to Level 3 of their MSci degree in Natural Sciences may be permitted to transfer to Level 3 of an appropriate degree within the BSc Natural Sciences.
- 73. Candidates whose achievement at the end of Level 3 does not qualify them to proceed to Level 4 of their MSci degree in Natural Sciences may be awarded an appropriate degree within the BSc Natural Sciences programme with Honours in accordance with the Core Regulations for the award of a Bachelors degree
- 74. Candidates whose achievement at the end of Level 4 does not qualify them to be awarded their MSci degree in Natural Sciences may be awarded an appropriate degree within the BSc Natural Sciences programme with Honours in accordance with the Core Regulations for the award of a Bachelors degree.
- 75. This programme is not available with an additional year to study abroad at a partner institution; however, this does not exclude the opportunity for an individual student to seek a concession to undertake a replacement year at an overseas institution where an appropriate programme of study can be identified and secured by that student in liaison with the University's International Office and subject to the approval of the Deputy Head of Faculty (Natural Sciences).

#### Professional accreditation

- 76. MSci Biology and Chemistry: This programme is accredited by the Royal Society of Chemistry for candidates entering Level 1 up to and including October 2023 as satisfying the academic requirements for the award of Chartered Chemist (CChem) for holders of first or second class honours degrees.
- 77. MSci Chemistry and Physics: This programme is recognised by the Institute of Physics as a degree with a physics component until February 2024.
- 78. MSci Chemistry and Physics: This programme is accredited by the Royal Society of Chemistry for candidates entering Level 1 up to and including October 2023 as satisfying the academic requirements for the award of Chartered Chemist (CChem) for holders of first or second class honours degrees subject to a necessary requirement for a candidate to take a final year project in the chemical sciences or at the interface of chemistry and physics.
- 79. MSci Mathematics and Physics: This programme is recognised by the Institute of Physics as a degree with a physics component until February 2024.