

NST Part II Physical Sciences: Half Subject Descriptions

Half Subject Chemistry

Students taking **Part II Chemistry (Option A)** are required to take:

- FOUR course units at level 1 (prescribed by the Part IB courses offered).
- THREE courses at level 2 (from a total of eight)
- THREE courses at level 3 (from a total of nine)

The examination consists of:

Paper 1	3-hr written paper	Contains questions on level 1 courses. Students answer four questions in total.
Paper 2	3-hr written paper	Contains questions on level 2 courses, a section for each course. Students answer four questions in total, not more than two from any one section.
Paper 3	3-hr written paper	Contains questions on level 3 courses, a section for each course. Students answer four questions in total, not more than two from any one section.
Paper 4	3-hr written paper	Contains short-answer questions on all courses, in two sections. Students answer all questions in Section 1 and six questions from Section 2.
practical work	various	Mainly continually-assessed work associated with the courses, but may include substitution with language learning, computer programming or mathematical modelling, or scientific writing. Students must complete 60 units in total.

Students taking **Half Subject Chemistry** are required to take:

- TWO course units at level 1 (prescribed by the Part IB courses offered).
- TWO courses at level 2 (from a total of eight)
- TWO courses at level 3 (from a total of nine)

The examination consists of:

Paper 1	1.5-hr written paper	Contains questions on level 1 courses. Students answer two questions in total.
Paper 2	1.5-hr written paper	Contains questions on level 2 courses, a section for each course. Students answer two questions in total, not more than one from any one section.
Paper 3	1.5-hr written paper	Contains questions on level 3 courses, a section for each course. Students answer two questions in total, not more than one from any one section.
practical work	various	Mainly continually-assessed work associated with the courses, with some restrictions but may include substitution with language learning, computer programming or mathematical modelling, or scientific writing. Students must complete 30 units in total.
literature review		On a topic in consultation with the course organiser.

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Half Subject Experimental and Theoretical Physics

Students taking **Part II Experimental and Theoretical Physics (Option A)** are required to take:

- a) **THREE** core courses in the Michaelmas Term (all compulsory).
- b) **TWO** options courses in the Lent Term (from a total of four)
- c) **FIVE** units of further work.

The examination consists of:

Paper 1	3-hr written paper	
Paper 2	2-hr written paper	
Paper 3	3-hr written paper	Students take either paper or two half-papers; three hours of written papers in total.
Paper 4	3-hr written paper	
practical work	various	Mainly continually-assessed work, but may include substitution with literature review, computer programming or a Long Vacation project. Students must complete 5 units in total.

Students taking **Half Subject Experimental and Theoretical Physics** are required to take:

- a) **ONE** core course in the Michaelmas Term in Advanced Quantum Mechanics (compulsory).
- b) **ONE** options course in the Lent Term (from a total of four)
- c) **THREE** units of further work.

The examination consists of:

Paper 2	2-hr written paper	core course
Paper 3	3-hr written paper	Students take one half-paper; one and a half hours of written papers in total.
Paper 4	3-hr written paper	
practical work	various	Mainly continually-assessed work, but may include substitution with literature review, computer programming or a Long Vacation project. Students must complete 3 units in total.

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Half Subject Geological Sciences

Students taking **Part II Geological Sciences (Option A)** are required to take:

- a) TWO core courses (from a total of five), taken in the Michaelmas Term.
- b) TWO options courses (from a total of eight), taken in the Lent Term.

The examination consists of:

Paper 1	3-hr written paper	Contains five sections (one on each of the core courses). Students answer four questions, including not more than two from any one section.
Papers 2 and 3	2 x 2-hr written papers	Contains two sections (options courses). Students answer one question from each section.
Paper 4	3-hr written paper	Students write one essay, selected from a range of topics.
practical work	various	In association with each of the core courses , <i>either</i> a 1.5-hr practical examination will be set, <i>or</i> students undertake continuously assessed practical work. Students take two practical examinations/assignments. In association with each of the options courses <i>either</i> a 2.5-hr practical examination will be set, <i>or</i> students undertake continually assessed practical work. Students take two practical examinations/ assignments.
critical review	< 5000 words	Critically reviewing the published literature in a selected field of the geological sciences.
project report	< 5000 words	On a project usually undertaken in the Long Vacation preceding the year of the examination.

Students taking **Half Subject Geological Sciences** are required to take:

- a) ONE core course (from a total of four), taken in the Michaelmas Term.
- b) ONE options course (from a total of five), taken in the Lent Term.

The examination consists of:

Paper 1	1.5-hr written paper	Contains five sections (one on each of the core courses). Students answer two questions, including not more than two from any one section.
Papers 2 and 3	2 x 1-hr written papers	Each paper contains five sections (option courses). Students answer one question on each paper, chosen from any section.
Paper 4	3-hr written paper	Students write one essay, selected from a range of topics.
practical work	various	In association with the core courses , <i>either</i> a 3-hr practical examination will be set, <i>or</i> students undertake continuously assessed practical work. In association with the options courses <i>either</i> a 2.5-hr practical examination will be set, <i>or</i> students undertake continually assessed practical work.
critical review	< 5000 words	Critically reviewing the published literature in a selected field of the geological sciences.

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Half Subject Materials Science and Metallurgy

Students taking **Part II Materials Science and Metallurgy (Option A)** are required to take:

- the nine core courses in the Michaelmas Term (all compulsory)
- the nine core courses in the Lent and Easter Terms (all compulsory)
- practicals, literature survey
- design project, materials project, management course

The examination consists of:

Paper 1	3-hr written paper	Contains questions on the Michaelmas Term courses. Students answer six questions from Section A and four questions from Section B.
Paper 2	3-hr written paper	Contains questions on the Lent and Easter Term courses. Students answer six questions from Section A and four questions from Section B.
Paper 3	3-hr written paper	Contains questions on the Michaelmas Term courses. Students answer one question from Section A and three questions from Section B.
Paper 4	3-hr written paper	Contains questions on the Lent and Easter Term courses. Students answer one question from Section A and three questions from Section B.
practical work	various	All continually-assessed work, including design and materials projects, literature survey, a report on a Long Vacation project and other work.

Students taking **Half Subject Materials Science and Metallurgy** are required to take:

- nine courses chosen by the Department (from a choice of eighteen)*
- practicals, literature survey

The examination consists of:

Paper 1	1.5-hr written paper	Contains questions on the Michaelmas Term courses. Students answer three questions from Section A and two questions from Section B.
Paper 2	1.5-hr written paper	Contains questions on the Lent and Easter Term courses. Students answer three questions from Section A and two questions from Section B.
Paper 3	1.5-hr written paper	Contains questions on the Michaelmas Term courses. Students answer two questions from Section B.
Paper 4	1.5-hr written paper	Contains questions on the Lent and Easter Term courses. Students answer two questions from Section B.
practical work	various	All continually-assessed work (chosen from a subset of that given above).

* Those currently suggested are: **C4** Tensor Properties, **C6** Crystallography, **C7** Kinetics, **C8** Chemical Stability, **C11** Surfaces and Interfaces, **C12** Plasticity and Deformation Processing, **C15** Fracture, Fatigue and Deformation, and **C17** Heat and Mass Transfer.

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Half Subject Mathematics

Students taking **Part II of the Mathematical Tripos** are advised to take:

- a) SIX lecture courses
- b) a CATAM (computer-aided research) project

The examination consists of:

Papers 1-4	each a 3-hr written paper	Questions on lecture courses are spread over all four papers. Students are advised to ensure that they take courses to balance the courses across papers.
CATAM project		

Students taking **Half Subject Mathematics** are required to take:

- a) TWO courses from a subset offered by the Faculty of Mathematics
- b) a CATAM (computer-aided research) project

The examination consists of:

Papers	various	Students will sit those papers on which questions relating to their chosen courses are offered. Students will be advised individually on the papers and the duration.
CATAM project		