The structures of the **Senior Sophister moderatorship examinations** are outlined below along with information that will appear on the front cover of the exam papers.

Please note that the information given below is informal and is not guaranteed to be error and/or omission free.

PY4P01-1 Quantum Mechanics II

Physics, Physics and Astrophysics

	Module	Lecturer	No. of Questions
Quantum Mechanics II	PY4P01	Paul Eastham	4

Rubric:
Follow the instructions below.
Booklets of Formulae and Tables are available from the invigilator for all students who require them. Graph paper is also available.

Non-programmable calculators are permitted for this examination – please indicate the make and model of your calculator on each answer book used.

ANSWER EACH QUESTION IN A SEPARATE ANSWER BOOK.
ALL QUESTIONS CARRY EQUAL MARKS

All Students
Answer *TWO* questions, in 2 hours.

PY4T01-1 Condensed Matter Theory

Theoretical Physics

	Module	Lecturer	No. of Questions
Condensed Matter Theory	PY4T01	Stefano Sanvito	4

Rubric:
Follow the instructions below.
Booklets of Formulae and Tables are available from the invigilator for all students who require them. Graph paper is also available.

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ALL STUDENTS MUST ANSWER EACH QUESTION IN A SEPARATE ANSWER BOOK.
ALL QUESTIONS CARRY EQUAL MARKS

All Students
Answer *TWO* questions, in 2 hours.

PY4P02-1 High Energy Physics

Physics, Physics and Astrophysics, and Theoretical Physics

	Module	Lecturer	No. of Questions
High Energy Physics	PY4P02	Cormac McGuinness	4

Rubric:
Follow the instructions below.
Booklets of Formulae and Tables are available from the invigilator for all students who require them. Graph paper is also available.

Non-programmable calculators are permitted for this examination – please indicate the make and model of your calculator on each answer book used.

ANSWER EACH QUESTION IN A SEPARATE ANSWER BOOK.
ALL QUESTIONS CARRY EQUAL MARKS

All Students
Answer *TWO* questions, in 2 hours.

PY4P06-1 Modern Optics

Physics, Physics and Astrophysics, and Nanoscience-Physics and Chemistry of Advanced Materials

		Module	Lecturer	No. of Questions
Section A	Optical Properties of Materials	PY4P06	John Donegan	2
Section B	Nonlinear Optics	PY4P06	Louise Bradley	2

Rubric:
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ANSWER EACH QUESTION IN A SEPARATE ANSWER BOOK.
ALL QUESTIONS CARRY EQUAL MARKS

All Students
Answer *TWO* questions, ONE from Section A and ONE from Section B, in 2 hours.

PY4T02-1 Electron and Photon Physics

Theoretical Physics

		Module	Lecturer	No. of Questions
Section A	Metal Physics and Superconductivity	PY4T02	J. M. D. Coey	2
Section B	Quantum Theory of Light and Matter	PY4T02	Paul Eastham	2

Rubric:
Follow the instructions below.
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ANSWER EACH QUESTION IN A SEPARATE ANSWER BOOK.
ALL QUESTIONS CARRY EQUAL MARKS

All Students
Answer *TWO* questions, ONE from Section A and ONE from Section B, in 2 hours.

PY4P03-1 Condensed Matter III

Physics, Nanoscience-Physics and Chemistry of Advanced Materials

		Module	Lecturer	No. of Questions
Section A	Metal Physics and Superconductivity	PY4P03	J. M. D. Coey	2
Section B	Semiconductor Devices	PY4P03	Plamen Stamenov	2

Rubric:
Follow the instructions below.
Booklets of Formulae and Tables are available from the invigilator for all students who require them. Graph paper is also available.

Non-programmable calculators are permitted for this examination – please indicate the make and model of your calculator on each answer book used.

ANSWER EACH QUESTION IN A SEPARATE ANSWER BOOK.
ALL QUESTIONS CARRY EQUAL MARKS

All Students
Answer *TWO* questions, ONE from Section A and ONE from Section B, in 2 hours.

PY4C01-1 Computer Simulation III

Physics & Astrophysics and Theoretical Physics (option)

		Module	Lecturer	No. of Questions
Section A	Numerical Methods	PY4C01	Matthias Möbius	2
Section B	High Performance Computing	PY4C01	Charles Patterson	2

Rubric:
Follow the instructions below.
Booklets of Formulae and Tables are available from the invigilator for all students who require them. Graph paper is also available.

Non-programmable calculators are permitted for this examination – please indicate the make and model of your calculator on each answer book used.

ANSWER EACH QUESTION IN A SEPARATE ANSWER BOOK.
ALL QUESTIONS CARRY EQUAL MARKS

All Students
Answer *TWO* questions, ONE from Section A and ONE from Section B, in 2 hours.

PY4P05-1 Electromagnetic Interactions II

Physics, Physics and Astrophysics

		Module	Lecturer	No. of Questions
Section A	Electromagnetic Theory	PY4P05	Charles Patterson	2
Section B	Optical Communications	PY4P05	Werner Blau	2

Rubric:
Follow the instructions below.
Booklets of Formulae and Tables are available from the invigilator for all students who require them. Graph paper is also available.

Non-programmable calculators are permitted for this examination – please indicate the make and model of your calculator on each answer book used.

ANSWER EACH QUESTION IN A SEPARATE ANSWER BOOK.
ALL QUESTIONS CARRY EQUAL MARKS

All Students
Answer *TWO* questions, ONE from Section A and ONE from Section B, in 2 hours.

PY4P04-1 Nanoscience

Physics, Nanoscience-Physics and Chemistry of Advanced Materials, and Theoretical Physics (Option)

	Module	Lecturer	No. of Questions
Nanoscience	PY4P04	Jonathan Coleman	4

Rubric:
Follow the instructions below appropriate.
Booklets of Formulae and Tables are available from the invigilator for all students who require them. Graph paper is also available.

Non-programmable calculators are permitted for this examination – please indicate the make and model of your calculator on each answer book used.

ANSWER EACH QUESTION IN A SEPARATE ANSWER BOOK.
ALL QUESTIONS CARRY EQUAL MARKS

All Students
Answer *TWO* questions, in 2 hours.

PY4P07-1 Advanced Topics in Physics

Physics and Theoretical Physics (Option)

		Module	Lecturer	No. of Questions
Section A	Thin Films	PY4P07	Cormac McGuinness	2
Section B	Polymers	PY4P07	Jonathan Coleman	2
Section C	Energy	PY4P07	Igor Shvets	2
Section D	Green's Functions in Physics	PY4P07	Mauro Ferreira	2
Section E	Diffraction, Imaging and Spectroscopy of Nanostructures	PY4P07	Hongzhou Zhang	2

Rubric:
Follow the instructions below appropriate to the degree course you are taking.
Booklets of Formulae and Tables are available from the invigilator for all students who require them. Graph paper is also available.

Non-programmable calculators are permitted for this examination – please indicate the make and model of your calculator on each answer book used.

ANSWER EACH QUESTION IN A SEPARATE ANSWER BOOK.
ALL QUESTIONS CARRY EQUAL MARKS

All Students
Answer *TWO* questions, ONE from each of any TWO Sections, in 2 hours.

PY4N07-1 Advanced Topics for Nanoscience

Nanoscience-Physics and Chemistry of Advanced Materials

		Module	Lecturer	No. of Questions
Section A	Thin Films	PY4N07	Cormac McGuinness	2
Section B	Polymers	PY4N07	Jonathan Coleman	2
Section C	Diffraction, Imaging and Spectroscopy of Nanostructures	PY4N07	Hongzhou Zhang	2

Rubric:
Follow the instructions below.
Booklets of Formulae and Tables are available from the invigilator for all students who require them. Graph paper is also available.

Non-programmable calculators are permitted for this examination – please indicate the make and model of your calculator on each answer book used.

ANSWER EACH QUESTION IN A SEPARATE ANSWER BOOK.
ALL QUESTIONS CARRY EQUAL MARKS

All Students
Answer *TWO* questions, *ONE* from each of *TWO* different sections, in 2 hours.

PY4A03-1 Planetary and Space Science

Physics and Astrophysics

	Module	Lecturer	No. of Questions
Planetary and Space Science	PY4A03	Peter Gallagher / Aline Vidotto	3

Rubric:
Follow the instructions below.
Booklets of Formulae and Tables are available from the invigilator for all students who require them. Graph paper is also available.

Non-programmable calculators are permitted for this examination – please indicate the make and model of your calculator on each answer book used.

ANSWER EACH QUESTION IN A SEPARATE ANSWER BOOK.
ALL QUESTIONS CARRY EQUAL MARKS

All Students
Answer *TWO* questions, in 1.5 hours.

PY4A05-2 Cosmology

Physics and Astrophysics, Theoretical Physics (option)

	Module	Lecturer	No. of Questions
Cosmology	PY4A05	Brian Espey	4

Rubric:
Follow the instructions below.
Booklets of Formulae and Tables are available from the invigilator for all students who require them. Graph paper is also available.

Non-programmable calculators are permitted for this examination – please indicate the make and model of your calculator on each answer book used.

ANSWER EACH QUESTION IN A SEPARATE ANSWER BOOK.
ALL QUESTIONS CARRY EQUAL MARKS

All Students
Answer *TWO* questions in 2 hours.

X-PY4PP1-3 Problem-Solving Physics

Physics, Physics and Astrophysics, and Theoretical Physics

General paper

Rubric:

There are 20 questions on the paper.
ALL QUESTIONS CARRY EQUAL MARKS.
Answers to questions should be clearly numbered on each page. Do not put answers from different questions on the same page. On the front of each answer booklet indicate the numbers of the questions answered in the appropriate space.

You should attempt to produce complete and carefully reasoned answers.
Where possible, make appropriate quantitative estimates to support your qualitative answers.

Booklets of Formulae and Tables are available from the invigilator for all students who require them. Graph paper is also available.

Non-programmable calculators are permitted for this examination – please indicate the make and model of your calculator on each answer book used.

All Students
Answer *TEN* questions in 3 hours.