Form and Conduct NST Part III 2023-24

NST3 - all students are permitted the use of an approved calculator for these exams.
NB: Part III Astrophysics exam papers are borrowed from Physics and Maths, please refer to their information

Course title	exam title	exam code	length of exam	Format	How many questions should be answered. Sections also outlined.	Type of questions	The weighting of exam paper	Any other relevant details such as the use of formula sheets or data books.
Biochemistry	Paper 1	1	3 Hours	Closed book In-person Inspera	Four sections, each with four questions. Section A will cover Michaelmas Term Module 1. Section B will cover Michaelmas Term Module 2. Section C will cover Lent Term Module 1. Section D will cover Lent Term Module 2. Students answer: (i) two questions from Section A or two questions from Section B (ii) two questions from Section C or two questions from Section D.	Essay Style	25%	
Biochemistry	Paper 2	2	3 Hours + 15 minutes reading time	Closed book In-person Inspera	Two sections. Section I will require the critical evaluation of a short biochemical research article in response to a series of compulsory questions embedded in the text. Section II will contain three essay questions of an integrative nature. Students answer one question from this section. Each section carries equal marks.	Essay Style Data handling	25%	
Chemistry	Paper 1A	1A	3 hours + 10 minutes reading time	Closed book In-person Handwritten	Contains one question from each Part III lecture course. Answer SIX questions without restriction	Problem based	16.70%	Department of Chemistry Data Book required. Molecular Models - students permitted to bring their own unassembled molecular model kits.
Chemistry	Paper 1B	1B	2.5 hours + 10 minutes reading time	Closed book In-person Handwritten	Contains one question from each Part III lecture course. Answer FIVE questions without restriction	Problem based		Department of Chemistry Data Book required. Molecular Models - students permitted to bring their own unassembled molecular model kits.
Chemistry	Paper 1C	1C	2 hours + 10 minutes reading time	Closed book In-person Handwritten	Contains one question from each Part III lecture course. Answer FOUR questions without restriction	Problem based		Department of Chemistry Data Book required. Molecular Models - students permitted to bring their own unassembled molecular model kits.
Chemistry	Paper 2	2	3 hours + 10 minutes reading time	Closed book In-person Handwritten	Divided into as many sections as there are courses given in the Michaelmas term: each section will contain 2 questions Answer FOUR questions taken from at least 3 different sections	Problem based	16.70%	Department of Chemistry Data Book required. Molecular Models - students permitted to bring their own unassembled molecular model kits.
Chemistry	Paper 3A	3A	3 hours + 10 minutes reading time	Closed book In-person Handwritten	Divided into as many sections as there are courses given in the Lent term: each section will contain 2 questions Answer FOUR questions taken from at least 3 different sections	Problem based	16.70%	Department of Chemistry Data Book required. Molecular Models - students permitted to bring their own unassembled molecular model kits.
Chemistry	Paper 3B	3B	2 hours 15 min + 10 min reading time	Closed book In-person Handwritten	Divided into as many sections as there are courses given in the Lent term: each section will contain 2 questions Answer THREE questions taken from at least 2 different sections	Problem based		Department of Chemistry Data Book required. Molecular Models - students permitted to bring their own unassembled molecular model kits.
Chemistry	Paper 3C	3C	1 hour 30 min + 10 min reading time	Closed book In-person Handwritten	Divided into as many sections as there are courses given in the Lent term: each section will contain 2 questions Answer TWO questions without restriction	Problem based		Department of Chemistry Data Book required. Molecular Models - students permitted to bring their own unassembled molecular model kits.
Chemistry	IDP1 Atmospheric chemistry & global change (optional)	IDP1	1 hour 30 minutes	Closed book In-person Handwritten	Contains 3 questions. Answer TWO questions	Problem based		Department of Chemistry Data Book required. Molecular Models - students permitted to bring their own unassembled molecular model kits.
Earth Sciences	Nuclear Materials	O15	2 Hours					The course will be examined by a 2 hour theory paper which will take place on the same date and time as the Materials Science Paper 3 examination.
Earth Sciences	Atmospheric chemistry and global change (Interdisciplinary paper) (1 and a half hour written paper)	IDP1	2 Hours					

Earth Sciences	The Earth System and Climate Change	IDP2						
Earth Sciences	Materials, electronics, and renewable energy (Interdisciplinary paper) (1and a half hour written paper)	IDP3						
Earth Sciences	Records of Major Environmental Change	O4			A single oral presentation given by each candidate will form an assessed part of this course, comprising 10% of the final mark. The remaining 90% will be assessed via a 2 hour theory paper, where candidates will choose to answer two questions from a choice of four.			
Earth Sciences	Solid Earth volatile cycles	O6	2 Hours		2 hours, answer two questions from a choice of three.Marks split 60% to theory paper and 40% to practical paper.			
Earth Sciences	Solid Earth volatile cycles	O6P	1.5 Hours		Answer all questions. Marks split 60% to theory paper and 40% to practical paper.			
Earth Sciences	Volcanology: physical mechanisms and petrological processes	O7	2 Hours		Answer two questions from a choice of three.			
Earth Sciences	Geological Carbon Storage: a route to negative emissions	O10	2 Hours		Answer two questions from a choice of three.			
Earth Sciences	Magnetism of Earth and planetary materials	O13	2 Hours		The course will be examined by a 2 hour theory exam (80%). Students answer 2 out of a choice of 3 essay style questions. For the remaining 20% of the mark, students produce an assessed written report (1500-2000 words) summarising the results of the 3 practical sessions. The deadline for the report will be 2 weeks after the last practical session.			
Earth Sciences	Electron microscopy	O14	2 Hours					The course will be examined by a 2 hour theory paper which will take place on the same date and time as the Materials Science Paper 2 examination.
Earth Sciences	Quantitative Palaeobiology	O16	2 Hours		Two questions from a choice of three.			
Earth Sciences	Frontiers of ice core science	O18	2 Hours		Answer two questions from a choice of four. Assessed seminar presentation: Individual seminar presentation (~15 mins) on a research paper. Marks split 90% to theory paper and 10% to seminar presentation.			
Earth Sciences	Earth history	O19	2 Hours		Answer two questions from a choice of four			
Earth Sciences	Computational Geosciences	O21	2 Hours		Answer three questions out of four. Both lecture material and practical material will be examined.			
Earth Sciences	Journey to the centre of the Earth	O24	2 Hours		One set of short-answer questions and one essay (out of choice of 3)	Short answer Essay style		
Earth Sciences	Nonlinear Dynamical Systems and Chaos in Geophysics	O25	2 Hours		50% of the mark: 2 hours theory exam (one set of short-answer questions). 50% of the mark: written essay (max 4000 words, 4 figures/tables) summarizing the results obtained using the techniques learnt in the course on a dataset of interest.			
Earth Sciences	Crustal Magmatic Systems	O26	2 Hours 45 mins		A choice of 4 essay questions, of which students answer two (one hour per essay), and then a fixed set of questions on thin section microscopy which should take 45 minutes. They would sit it all in one go, with the microscopes there, so they can be elastic about the amount of time they spend on each of their 3 tasks.			
Materials Science	Paper 1	1	3 hours	Open-book In-person Handwritten	Section A: 6 questions Section B: 5 questions Students answer 3 from Section A and 1 from Section B	Hybrid Essay style	17%	Data Book provided

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Materials Science	Paper 2	2	3 hours	Open-book In-person Handwritten	6 sections, 2 questions in each Students answer 5 questions	Hybrid	22%	Data Book provided
Materials Science	Paper 3	3	3 hours	Open-book In-person Handwritten	7 sections, 2 questions in each Students answer 5 questions	Hybrid	22%	Data Book provided
Physics	Atomic and optical physics (Major Topic)	1/AOP	2 hours	Closed book In-person Handwritten	Students answer 2 out of 3 questions		10%	Mathematical Formulae booklet V. 2.5
Physics	Advanced quantum condensed matter physics (Major Topic)	1/AQC	2 hours	Closed book In-person Handwritten	Students answer 2 out of 3 questions		10%	Mathematical Formulae booklet V. 2.5
Physics	Biological Physics (Major Topic)	1/BIO	2 hours	Closed book In-person Handwritten	Students answer 2 out of 3 questions		10%	Mathematical Formulae booklet V. 2.5
Physics	Physics of the Earth as a planet (Major Topic)	1/PEP	2 hours	Closed book In-person Handwritten	Students answer 2 out of 3 questions		10%	Mathematical Formulae booklet V. 2.5
Physics	Particle physics (Major Topic)	1/PP	2 hours	Closed book In-person Handwritten	Students answer 2 out of 3 questions		10%	Mathematical Formulae booklet V. 2.5
Physics	Quantum condensed matter field theory (Major Topic)	1/QCM	2 hours	Closed book In-person Handwritten	Students answer 2 out of 3 questions		10%	Mathematical Formulae booklet V. 2.5
Physics	Relativistic astrophysics and cosmology (Major Topic)	1/RAC	2 hours	Closed book In-person Handwritten	Students answer 2 out of 3 questions		10%	Mathematical Formulae booklet V. 2.5
Physics	Quantum field theory (Counts as one Major Topic) (MAT3 Paper 301)	1/QFT	3 hours	Closed book In-person Handwritten	Students answer 2 out of 3 questions		10%	Mathematical Formulae booklet V. 2.5
Physics	Advanced Statistical Mechanics (Minor Topic)	2/ASM	90 minutes	Closed book In-person Handwritten	Students answer 2 out of 3 questions		5%	Mathematical Formulae booklet V. 2.5
Physics	Exoplanets (minor topic)	2/EXO	90 minutes	Closed book In-person Handwritten	Students answer 2 out of 3 questions		5%	Mathematical Formulae booklet V. 2.5
Physics	Formation of structure in the Universe (Minor Topic)	2/FSU	90 minutes	Closed book In-person Handwritten	Students answer 2 out of 3 questions		5%	Mathematical Formulae booklet V. 2.5
Physics	Gauge field theory (Minor Topic)	2/GFT	90 minutes	Closed book In-person Handwritten	Students answer 2 out of 3 questions		5%	Mathematical Formulae booklet V. 2.5
Physics	Medical physics (Minor Topic)	2/MP	90 minutes	Closed book In-person Handwritten	Students answer 2 out of 3 questions		5%	Mathematical Formulae booklet V. 2.5
Physics	Phase transitions (Minor Topic)	2/PT	90 minutes	Closed book In-person Handwritten	Students answer 2 out of 3 questions		5%	Mathematical Formulae booklet V. 2.5
Physics	Quantum information (Minor Topic)	2/QI	90 minutes	Closed book In-person Handwritten	Students answer 2 out of 3 questions		5%	Mathematical Formulae booklet V. 2.5
Physics	Quantum Simulation (Minor Topic)	2/QS	90 minutes	Closed book In-person Handwritten	Students answer 2 out of 3 questions		5%	Mathematical Formulae booklet V. 2.5

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Physics	Superconductivity and quantum coherence (Minor Topic)	2/SQC	90 minutes	Closed book In-person Handwritten	Students answer 2 out of 3 questions		5%	Mathematical Formulae booklet V. 2.5
Physics	The Physics of Nanoelectronic Systems (Minor Topic)	2/PNS	90 minutes	Closed book In-person Handwritten	Students answer 2 out of 3 questions		5%	Mathematical Formulae booklet V. 2.5
Physics	Atmospheric chemistry and global change (NST3CH IDP1) (Minor Topic)	2/IDP1	90 minutes	Closed book In-person Handwritten	Students answer 2 out of 3 questions		5%	Mathematical Formulae booklet V. 2.5
Physics	The Earth System and Climate Change (NST3ES IDP2) (Minor Topic)	2/IDP2	2 hours	Closed book In-person Handwritten	Students answer 2 out of 3 questions		5%	Mathematical Formulae booklet V. 2.5
Physics	Materials, electronics and renewable energy (NST3PHY IDP3) (Minor Topic)	2/IDP3	90 minutes	Closed book In-person Handwritten	Students answer 2 out of 3 questions		5%	Mathematical Formulae booklet V. 2.5
Physics	Quantum Computation (MAT3 Paper 324) (Minor Topic)	2/QC	3 hours	Closed book In-person Handwritten	Students answer 2 out of 3 questions		5%	Mathematical Formulae booklet V. 2.5
Physics	Topological Quantum Matter (MAT3 Paper 342) (Minor Topic)	2/TQM	2 hours	Closed book In-person Handwritten	Students answer 2 out of 3 questions		5%	Mathematical Formulae booklet V. 2.5
Physics	Advanced quantum field theory(MAT3 Paper 304) (Minor Topic)	2/AQFT	3 hours	Closed book In-person Handwritten	Students answer 2 out of 3 questions		5%	Mathematical Formulae booklet V. 2.5
Physics	General physics paper	3/GPP	3 hours	Closed book In-person Handwritten	Students answer 10 out of 17 questions		15%	Mathematical Formulae booklet V. 2.5
Systems Biology	Paper 1	P1			section I - 1,2,3, Section II - 4,5,6 6 questions/2 sections - answer 1 from each section	Integrative essay	10% of the subject	
Systems Biology	Paper 2	P2			6 questions - answer 3	Questions on the DAH Module	15% of the subject	
Systems Biology	Paper 3	P3			2 questions - answer 2	Practical exam on the MAN Module	15% of the subject	
Systems Biology	Paper 4	P4			Section I - 1a,b,c,d,e,f,g,h,I,j,k,l,m,n,o Section II - 2a,b,c 2 sections - answer all in section I and answer 1 from section II	Data handling problem and outline grant proposal	15% of the subject	