PROGRAMME SPECIFICATION	

1	**Awarding Institution**	Newcastle University
2	**Teaching Institution**	Newcastle University
3	**Final Award**	n/a
4	**Programme Title**	BSc with Honours in Physics Foundation Year
5	**UCAS/Programme Code**	F304
6	**Programme Accreditation**	n/a
7	**QAA Subject Benchmark(s)**	
8	**FHEQ Level**	3
9	**Last updated**	February 2023

10 Programme Aims

To equip students with the knowledge and ability to enter the Physics degree programme.

11 Learning Outcomes

The programme provides opportunities for students to develop and demonstrate knowledge and understanding, qualities, skills and other attributes to enable successful study at stage I. Students will develop knowledge in most of the following areas.

Knowledge and Understanding

On completing the programme students should:

A1 be able to demonstrate knowledge of maths methods and have knowledge & understanding of maths topics such as differential and integral calculus, including techniques of differentiation and of systematic integration; know the derivatives of some standard mathematical functions; understand why complex numbers were created.

A2 be able to demonstrate knowledge and understanding of materials on the atomic, micro-and macro-scales, and be able to demonstrate knowledge & understanding of the wide range of properties exhibited by materials and how to tailor these to advantage. They should be able to demonstrate knowledge & understanding of the mechanical properties of materials and how these are influenced by atomic bonding and microstructure.

A3 Have knowledge of Kinematics and dynamics, displacement and rates of change, simple harmonic motion, Newton's laws, work and energy, kinetic and potential energy, power and efficiency, conservation of energy and momentum, friction.

A4 demonstrate knowledge of engineering units and the laws relating to quasistatic field phenomena; passive electrical components; simple DC, AC and digital circuit analysis and design. They will also have a qualitative grasp of transistor theory.

A5 be able to understand the principles of data collection. They will also have a basic knowledge of data interpretation and data analysis.

A6 understand simple algorithms and discuss principles of computer programming.

A7 demonstrate knowledge and understanding of the elementary physics associated with: Forces, energy, the structure of the atom and the interaction of light with atoms, the structure of the nucleus and its stability, radioactivity and radioactive decay.

Teaching and Learning Methods

Lectures, lecture materials, practical labs and drop-ins. The primary means of imparting knowledge and understanding is lectures. Throughout the course students are encouraged to supplement taught material by independent reading, for which they are given extensive support and guidance on reading materials and how to use them.

Assessment Strategy

Written examinations & coursework

Intellectual Skills

On completing the programme students should be able to:

B1 Use appropriate SI units for engineering and scientific calculations

B2 solve real world application problems involving algebraic manipulation, graphical techniques and arithmetical skills.

B3 select and process data to provide appropriate information for technical problems.

B4 identify relevant mathematical principles, functions and approaches, and be able to use them in both mathematical and applied contexts.

B5 be able to present data in numerical, graphical and tabular form.

Teaching and Learning Methods

Intellectual skills are developed through lectures, lecture reading and the project modules. Students are encouraged to acquire them through solving problems arising from these.

Assessment Strategy

Written Exams & coursework.

Practical Skills

On completing the programme students should be able to:
C1 integrate taught theory and analytical methods with 'capability' skills in problem solving and practical work.
C2 carry out basic calculations in materials science, selecting and applying the relevant mathematical procedures.
C3 use the oscilloscope and both analogue and digital meters

Teaching and Learning Methods

Lab sessions, tutorials. Practical skills are developed by laboratories. Students are encouraged to learn by doing, i.e. undertaking experiments for themselves as part of their modules.

Assessment Strategy

Coursework and worksheets for laboratory practicals.

Transferable/Key Skills

On completing the programme students should be able to:
D1 use problem worksheets and lecture notes to study a physical subject at a foundation level..
D2 carry out basic calculations in selecting and applying the relevant mathematical procedures.
D3 produce effective presentations: present data in numerical, graphical and tabular form.
D4 undertake project work and report writing.
D5 produce coursework
D6 manage their time
D7 participate in groupwork

D8 select and process data to provide appropriate information for technical problems.
D9 be able to proficiently use a range of mathematical and physical concepts required in Stage 1 physics modules, and be able to apply such skills to a range of problems arising in physical systems.

Teaching and Learning Methods

Lectures, practical, handouts and lecture notes. Expertise in problem-solving is modelled in lectures and supported tutorials. Communication and presentation skills are also developed in the group project sessions. Student learning is supported by regular problem solving exercises, and which also has a formative use.

Assessment Strategy

Coursework, in-class tests and written examinations.

12 Programme Curriculum, Structure and Features

Basic structure of the programme

120 compulsory credits taken in a 1 stage programme.

Key features of the programme (including what makes the programme distinctive)

It is Foundation Level, and has wide-ranging subject content in order to equip students to study in a physics degree.

Programme regulations (link to on-line version)

-RF304-F305.pdf (ncl.ac.uk)

13 Support for Student Learning

Generic Information

14 Methods for evaluating and improving the quality and standards of teaching and learning

Generic information regarding University provision is available at the following link.

Generic Information

15 Regulation of assessment

Generic information regarding University provision is available at the following link.

Generic Information

In addition, information relating to the programme is provided in:

The University Prospectus: http://www.ncl.ac.uk/undergraduate/degrees/#subject

Degree Programme and University Regulations: http://www.ncl.ac.uk/regulations/docs/

Please note. This specification provides a concise summary of the main features of the programme and of the learning outcomes that a typical student might reasonably be expected to achieve if she/he takes full advantage of the learning opportunities provided.