MODULE SPECIFICATION PROFORMA

Module Code:	LND309

Module Title:	Introduction to Science

Level:	3	**Credit Value:**	20

Cost Centre(s):	GAHT, GAFS	JACS3 **code**:	F100

Faculty:	Faculty of Arts, Science and Technology	**Module Leader:**	Dr Jixin Yang

Scheduled learning and teaching hours	40 hrs
Guided independent study	160 hrs
Placement	0 hrs
Module duration (total hours)	200 hrs

Programme(s) in which to be offered (not including exit awards)	Core	Option
BSc (Hons) Chemistry (with Foundation Year)	✓	☐
BSc (Hons) Forensic Science (with Foundation Year)	✓	☐
FdSc Animal Studies (with Foundation Year)	✓	☐
BSc (Hons) Equine Science and Welfare Management (with Foundation Year)	✓	☐
BSc (Hons) Animal Science (with Foundation Year)	✓	☐

Pre-requisites
None

Office use only
Initial approval: 12/12/2018 Version no:1
With effect from: 01/09/2019
Date and details of revision: Version no:

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Module Aims

The aim of this module is to provide students the fundamental background knowledge in natural science required for their full degree study in the relative areas.

Specific aims:

- To encourage students to develop confidence in their own abilities in science.
- To introduce a basic bank of knowledge in major scientific areas.
- To develop students' learning skills and ability to apply science concepts to problem solving.

To enable students to gain an understanding of how science and technology influence and are influenced by contemporary society.

Intended Learning Outcomes

Key skills for employability

KS1	Written, oral and media communication skills
KS2	Leadership, team working and networking skills
KS3	Opportunity, creativity and problem solving skills
KS4	Information technology skills and digital literacy
KS5	Information management skills
KS6	Research skills
KS7	Intercultural and sustainability skills
KS8	Career management skills
KS9	Learning to learn (managing personal and professional development, self-management)
KS10	Numeracy

At the end of this module, students will be able to		Key Skills	
1	Describe the basic concepts, theories and laws involved in physics, chemistry and biology and their applications in the real life, especially in their intended programme areas.	KS1	KS3
		KS4	KS5
2	Demonstrate an ability to process data and solve questions in the scientific area.	KS1	KS3
		KS4	KS10
3	Demonstrate a basic understanding to the philosophy and methodology in science.	KS1	KS4
		KS6	KS7
4	Demonstrate basic scientific writing skills and formulate an overview of a scientific topic.	KS1	KS4
		KS5	KS6

Transferable skills and other attributes
• Problem solving • Mathematical applications • Design, analysis, and synthesis • ICT • Presentation skills

Derogations
None

Assessment:

Indicative Assessment Tasks:

Assessment 1: Coursework with a number of questions covering all the topics in natural science delivered in this module. (50%)

Assessment 2: Research essay on a topic in science (~1,500 words) (50%)

Assessment number	Learning Outcomes to be met	Type of assessment	Weighting (%)	Duration (if exam)	Word count (or equivalent if appropriate)
1	1-2	Coursework	50	n/a	1,000
2	3-4	Essay	50	n/a	1,500

Learning and Teaching Strategies:

Methods of delivery:
Lectures
Seminars
Problem solving workshops
Directed study *via* Moodle VLE
Student directed study

The basic factual material will be delivered by means of lectures and featured seminars. Lectures will be supported by workshops in which the students will be able to test their knowledge and understanding of the concepts covered. Students will further be able to develop their knowledge and understanding by reading additional course material and attempting problem sets and quizzes on Moodle VLE. Independent student-directed learning will enable students to delve more deeply into the subject material, enhancing their learning, while developing their IT skills.

Syllabus outline:

- A brief introduction to scientific history.
- Philosophy and methodology in science.
- Scientific laws and theories.
- Fundamental knowledge in physics, including mechanics, thermology, optics and electricity.
- Fundamental knowledge in chemistry, including atoms, molecules, chemical properties of materials and basic chemical reactions.
- Fundamental knowledge in biology, including cells, plant and animals.
- Impact of science and technology to the human society.
- Ethical issues in sciences.

Indicative Bibliography:

Essential reading

1. Breithaupt, J (2015) *Physics*, Nelson Thomas Ltd.
2. Ebbing, D. D. and Gammon, S. D. (2017) *General Chemistry, 11th Edition*, Thomson Brooks/Cole.
3. Solomon, E., Berg, L. and Martin D. (2013), *Biology, 10th Edition*, Cengage Learning.

Other indicative reading

A-Level text books in physics, chemistry and biology are recommended.

http://www.Facultyscience.co.uk/home