PRIFYSGOL glyndŵr UNIVERSITY

MODULE SPECIFICATION FORM

Module Title: **Introduction to Science**	Level: 3	Credit Value: 20

Module code: LND305	Cost Centre: GAHT	JACS3 code: N/A

Trimester(s) in which to be offered: 1	With effect from: September 2014

Office use only: To be completed by AQSU:	Date approved: Sept 2014 Date revised: - Version no: 1

Existing/New: New	Title of module being replaced (if any): N/A

Originating Academic Department:	Biology and Environment / Chemistry	Module Leader:	Dr Jixin Yang

Module duration (total hours):	200	Status: core/option/elective (identify programme where appropriate):	Core to Bioscience Foundation Year Strand
Scheduled learning & teaching hours	50		
Independent study hours	150		
Placement hours	0		

Programme(s) in which to be offered: BSc (Hons) Forensic Science (including Foundation Year) BSc (Hons) Geography, Ecology and Environment (including Foundation Year) BSc (Hons) Chemistry with Green Nanotechnology (including Foundation Year) BSc (Hons) Equine Science and Welfare Management (including Foundation Year) BSc (Hons) Wildlife and Plant Biology (including Foundation Year)	Pre-requisites per programme (between levels): None

FdSc Animal Studies (including Foundation Year)	

Module Aims:

The aim of this module is to provide students the fundamental background knowledge 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:

At the end of this module, students will be able to ...

1. Describe the basic concepts involved in physics, chemistry and biology and their applications in the real life, especially in their intended programme area.
2. Demonstrate an understanding to the basic theories and laws in physics, chemistry and biology.
3. Demonstrate ability to process data and solve questions in the scientific area.
4. Demonstrate an understanding to the philosophy and methodology in science.
5. Formulate an overview of a scientific topic.

Key skills for employability

1. Written, oral and media communication skills
2. Leadership, team working and networking skills
3. Opportunity, creativity and problem solving skills
4. Information technology skills and digital literacy
5. Information management skills
6. Research skills
7. Intercultural and sustainability skills
8. Career management skills
9. Learning to learn (managing personal and professional development, self management)
10. Numeracy

Assessment:

Assessment 1: Course work with a number of questions covering physics and chemistry and biology subjects. (50%)

Assessment 2: Research essay on a topic in science (~2500 words) (50%)

Assessment number	Learning Outcomes to be met	Type of assessment	Weighting	Duration (if exam)	Word count (or equivalent if appropriate)
1	1-3	Coursework	50%		1500
2	4-5	Essay	50%		1500

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.

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 – terminology and genetics and DNA and genetics

Ethical issues in sciences.

Bibliography:

Essential reading:

Breithaupt, J (2001) *Physics*, Nelson Thomes Ltd.

Ebbing, D. D. and Gammon, S. D. (2012) General Chemistry, 10th Edition, Thomson Brooks/Cole.

Solomon, E., Berg, L. and Martin D. (2011), Biology, 9th Edition, Cengage Learning.

Other indicative reading:

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

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