AGRI10046 Foundations of Agricultural Sciences 2

Credit Points:	12.5
Level:	1 (Undergraduate)
Dates & Locations:	2016, Parkville This subject commences in the following study period/s: September, Parkville - Taught on campus. This subject is taught over the last six weeks of semester.
Time Commitment:	Contact Hours: 58 hours Total Time Commitment: 170 hours
Prerequisites:	None
Corequisites:	None
Recommended Background Knowledge:	This subject assumes little background knowledge in science.
Non Allowed Subjects:	None
Core Participation Requirements:	For the purposes of considering request for Reasonable Adjustments under the Disability Standards for Education (Cwth 2005), and Student Support and Engagement Policy, academic requirements for this subject are articulated in the Subject Overview, Learning Outcomes, Assessment and Generic Skills sections of this entry. It is University policy to take all reasonable steps to minimise the impact of disability upon academic study, and reasonable adjustments will be made to enhance a student's participation in the University's programs. Students who feel their disability may impact on meeting the requirements of this subject are encouraged to discuss this matter with a Faculty Student Adviser and Student Equity and Disability Support: http://services.unimelb.edu.au/disability
Coordinator:	Dr Helen Suter
Contact:	helencs@unimelb.edu.au
Subject Overview:	This subject, which builds on concepts and knowledge introduced in Foundations of Agricultural Science 1, aims to provide Bachelor of Agriculture students with an understanding of the underpinning enabling physical sciences, as they relate to agricultural systems. Concepts in physics, chemistry, mathematics and data management will be introduced in the context of the science of earth and soil, water and climate, and plant and animal biology. In particular, this subject introduces students to important underpinning principles in physics and chemistry, in the context of water, solutions, soils and cells. Topics include fluid movement and mechanics, solubility, precipitation reactions, redox reactions and galvanic cells, acid base reactions, salinity and conductivity. . The chemistry of selected elements will be discussed in the context of both soils and cells Modular circuitry and electronics will be introduced, as these principles apply to agricultural contexts and to precision farming.
Learning Outcomes:	This subject should enable students to understand the importance of physical and chemical principles as the foundations of agricultural sciences, and should develop their capacity to: # Apply an understanding of key concepts in physics and chemistry to describe fundamental processes such as solubility, precipitation, conductivity, redox reactions, cation exchange capacity, capillarity, surface tension, evaporation # Understand and explain the physics principles of fluids, thermal physics, electricity and magnetism # Apply principles in physics and chemistry using logical reasoning, together with appropriate mathematical reasoning, to a variety of familiar and novel situations and problems in agricultural sciences # Integrate the use of numerical data, graphical analysis, basic statistics, and mapping, to represent and interpret events in the natural world

Assessment:	A two-hour written examination due at the end-of-semester examination period worth 60% Four x 250 word online intra-semester assessments based on workshop activities due in weeks one to four of teaching period worth 20% A 1000-word equivalent intra-semester test due in Week 5 of teaching period worth 20%
Prescribed Texts:	None
Breadth Options:	This subject is not available as a breadth subject.
Fees Information:	Subject EFTSL, Level, Discipline & Census Date, http://enrolment.unimelb.edu.au/fees
Generic Skills:	A student who completes this subject should be able to: # Explain their understanding of fundamental principles in chemistry, physics and data management and their application in agricultural contexts lucidly, both in writing and orally # Acquire and interpret experimental data # Participate as an effective member of a group in tutorial discussions, and study groups # Think independently and analytically, and direct his or her own learning; and manage time effectively in order to be prepared for regular tutorial classes, tests and the examination
Related Course(s):	Bachelor of Agriculture