



**Definitions  
Pertaining to the Required Basic Knowledge of Agrology  
and Foundational Science**

**Definition of a Fundamental Natural Science Course:**

A fundamental natural science course provides science instruction that forms the foundation upon which subsequent natural science courses or agrology courses are built. It is by its very nature ‘introductory’. Fundamental natural science courses are typically taught within the first two years of any four-year university degree program, generally do not have university level course prerequisites, and include introductory courses in biology/biological sciences, botany, biochemistry, chemistry, earth sciences, ecology, geology, hydrogeology, hydrology, microbiology, and physics.

The basis for identifying a fundamental science course includes the following assessment:

Does the course provide instruction in fundamental principles of a particular science or does it provide instruction in application of fundamental principles to agrology-related activities?

Example 1: Introduction to Organic Chemistry is considered a fundamental science course whereas Environmental Chemistry is considered an agrology course. The first course is fundamental to the latter. Or in other words, the latter course relies upon understanding of principles in the first course.

Example 2: Introduction to Biochemistry is considered a fundamental science course whereas Plant Physiology is considered an agrology course. The first course is fundamental to the latter.

Does the course provide further instruction in principles taught in introductory science courses with little application to agrology-specific activities? If so, the course is a fundamental science course.

Example: Introduction to Inorganic Chemistry is a fundamental science course. Chemistry of the Main Group Elements is also a fundamental science course. The first course introduces fundamental principles of inorganic chemistry. The latter course explores these principles in greater depth with respect to specific elements, yet with little to no application to agrology-related activities.

Hence, a natural science course will be deemed to be ‘fundamental’ by virtue of what it is (e.g., introductory, basic science) or what it is not (e.g., little application to agrology-related activities). Generally speaking, the word ‘fundamental’ is tacitly associated with the word ‘introductory’ or ‘junior’, and at most educational institutions would be designated by the lowest course numbers.

Natural Science courses that might be ostensibly considered to be ‘fundamental’ may also in fact be considered to be ‘agrology’ courses due to their important role in agrology-related education (e.g., plant biochemistry).

**Definition of an Agrology Course:**

An agrology course provides instruction in agricultural and/or environmental science that includes instruction with respect to at least one of the following three areas:

1. The development, production or processing of plant and animal products for human use, be it food, fiber or fuel,
2. The identification of, and/or management of biophysical land resources (soil, water, vegetation, and/or air) under various land use types, and/or
3. The economic, social and environmental requirements for long-term sustainability of various land use systems.

Fishery science and forest related courses may be considered agrology courses where aquaculture and tree farming falls within the definition of agrology for a particular agrology institute.

Agrology shares common subject matter boundaries with the forestry profession and the biology profession. Forestry or biology courses may be distinguished from agrology courses based on the following. A course related to silviculture and the management of tree species for wood production is considered a forestry course. However, forestry courses that integrate management of biophysical resources for competing land uses within forested areas are considered agrology courses.

Example: Forest Mensuration is considered a Forest Science course whereas Forest Ecology is considered an agrology course. The first course relates to specific activities of the forestry industry whereas the latter speaks to the interaction of biophysical resources and their management within forested lands.

A course that focuses on organism biology of a particular wildlife species (excluding farm-raised species such as elk, bison, deer) are not considered agrology courses. However, courses related to the management of biophysical resources for the purposes of habitat management under competing land uses are considered agrology courses.

Example: Ornithology is considered a Biological Sciences course whereas Wildlife Habitat Management is considered an agrology course. Ornithology is an organism-based course whereas the latter course includes all biophysical resources comprising “habitat”.