

# AGRICULTURE (AGRI)

This is a list of the Agriculture courses available at KPU.

## **AGRI 1150** **3 Credits**

### **Sustainable Agriculture for the 21st Century**

Students will study, through the lens of human enterprise sustainability, the aspects and ramifications of dominant and alternate agri-food system paradigms. They will examine agri-food systems from perspectives, such as environmental stewardship, food self-reliance, ethics, health, and nutrition. Students will compare, contrast, evaluate, and critique key concepts, elements, and outcomes of diverse agri-food system dimensions.

*Not Transferable*

## **AGRI 1299** **1 Credits**

### **Food System Field Analysis**

Students will (in this week long, intensive, field based course) visit and observe agri-food system farm processing and distribution enterprises in British Columbia. They will assess the function and operation of these enterprises and identify challenges and opportunities for advancing agri-food system sustainability. Students will explore ways to define, assess, and interpret factors that contribute to agri-food system sustainability. They will learn how factors interact and learn to weigh these factors in holistic agri-food system sustainability assessments, decision making, and planning processes.

*Prerequisites: Admission to the Bachelor of Applied Science, Sustainable Agriculture degree.*

*Not Transferable*

## **AGRI 2190** **3 Credits**

### **Plant Science**

Students will study basic fruit and vegetable crop plant anatomy, morphology, physiology, plant growth and development, reproduction, genetics and improvement methods. They will also study environmental (biotic and abiotic) and agroecosystem management interactions and their effects on crop growth, yield and quality.

*Prerequisites: BIOL 1210*

*Not Transferable*

## **AGRI 2220** **4 Credits**

### **Soil Stewardship and Management**

Students will study the main characteristics of agricultural soils, their ecology and management with emphasis on understanding soil as a living system, in the context of the agro-ecosystem and as a precious natural resource. They will study soil formation and maturation processes, soil classification, physical and chemical characteristics of soils and how these influence suitability for and management in agriculture, soil water management, soil biology and ecology and soil conservation. Students will also study composting methods and compost use.

*Not Transferable*

## **AGRI 2230** **3 Credits**

### **Sustainable Human Economy**

Students will learn about economic principles within the context of environmental, economic and social sustainability. They will study key principles and concepts of ecological and sustainable economics in comparison to classical and neo-classical economics.

*Not Transferable*

## **AGRI 2240** **3 Credits**

### **Ecologically Based Pest Management**

Students will study common plant, insect, mite, bacterial, fungal, viral and vertebrate pests, and associated injury and or disease caused to common fruit and vegetable crop plants cultivated in the Pacific Northwest. They will study the agro-ecological basis for plant pest occurrence and plant response to infestation/infection. Students will study cultural, behavioral, biological, physical and chemical pest management methods and tools based on maintaining or enhancing agro-ecosystem integrity, function and sustainability. They will learn to identify/ diagnose arthropod, plant and microbial pests/ disease and develop appropriate integrated pest management strategies and action plans. They will also learn to distinguish between pathogenic and non-pathogenic plant disease.

*Prerequisites: AGRI 2190, BIOL 2322*

## **AGRI 2250** **3 Credits**

### **Agriculture and Food Systems**

Students will study the history of agriculture. They will examine and compare different systems of food production such as traditional, industrial, organic, biodynamic, swidden, permaculture and garden agriculture in their historical, environmental, social and economic contexts.

*Not Transferable*

## **AGRI 3135** **6 Credits**

### **Business of Agriculture**

Students will examine the unique aspects of small scale agricultural business operations. They will study the critical factors involved in business development and management such as: goal setting, farm mapping and planning, business plan development, record keeping, employee management and marketing.

*Prerequisites: 60 credits at the 1100 level or higher or permission of instructor*

*Transferable (refer to transfer guide)*

## **AGRI 3225** **3 Credits**

### **Experimental Design and Analysis**

Students will learn the fundamental principles of agricultural experimental design and analysis and prepare an applied research proposal.

*Prerequisites: AGRI 1150, AGRI 1299, Math 1115*

*Not Transferable*

**AGRI 3260** **3 Credits**  
**Animal Agriculture**  
Students will study introductory and general principles and practices utilized for small and large animal production, with an emphasis on small scale, low input, integrated methods and objectives. They will study breeds and breeding, nutrition and health, reproduction, sheltering, growth and development, behavior, egg, meat and milk production, and integration of stock with cropping systems on sustainable farms.

*Prerequisites: 60 credits*  
*Not Transferable*

**AGRI 3270** **3 Credits**  
**Vegetable Crop Production**  
Students will study the principles and practices utilized to cultivate vegetable crops, emphasizing but not limited to southwest British Columbia production (topics include adapted and novel crops and cultivars, field preparation, seeding, soil and nutrition management, water management, pest management, crop plant growth and development, crop maturation and harvest and post-harvest handling). They will also study integrated cropping system planning and management.

*Prerequisites: AGRI 2190 and AGRI 2220*  
*Not Transferable*

**AGRI 3280** **3 Credits**  
**Fruit and Nut Crop Production**  
Students will study the principles and practices utilized in tree, small, bush, and cane fruit crops and nut crops cultivated in British Columbia (topics will include adapted and novel crops; climatic requirements; site selection and preparation; propagation; orchard, grove and patch planning and establishment; canopy management; pest, water, and fertility management; plant growth and development; crop maturation and harvest; and post-harvest handling and storage).

*Prerequisites: AGRI 2190 and AGRI 2220*  
*Not Transferable*

**AGRI 3290** **3 Credits**  
**Agroecosystem Management I**  
Students will study the integrated application of food crop production principles and practices in a laboratory farm setting. They will focus on late winter and spring operations including planning seasonal operations and plantings, equipment assessment and maintenance; procuring seed and plants; establishing orchard and field plantings; perennial crops canopy management; soil, nutrition, irrigation and pest management regimes.

*Prerequisites: AGRI 2190 and AGRI 2220 and AGRI 2240*  
*Not Transferable*

**AGRI 3390** **6 Credits**  
**Agro-Ecosystems Management II**  
Students will build on the crop production principles and practices of integrated crop production covered in AGRI 3290. They will focus on spring and summer operations including work scheduling; transplant production; planting, transplanting, and direct seeding; fertility management; equipment use and maintenance; irrigation; pest management; weed management; warm season cover cropping; harvest; post-harvest management; and record keeping.

*Prerequisites: AGRI 3290*  
*Transferable (refer to transfer guide)*

**AGRI 3398** **3 Credits**  
**Crop Physiology and Ecology**  
Students will explore the interactions of plant communities with their environment across plant life cycles and the implications of this interaction on the quantity and quality of crop yield. Students will learn biochemical, physiological and ecological principles important to the growth and development of crops and interaction with the environment.

*Prerequisites: AGRI 2190 and AGRI 2220*  
*Not Transferable*

**AGRI 3399** **3 Credits**  
**Research Project I**  
Students will continue to build and design their applied research project from AGRI 3225. They will complete the development of a research proposal which includes a justification, detailed workplan and budget for the project and implement the research.

*Prerequisites: AGRI 3225*  
*Not Transferable*

**AGRI 3591** **3 Credits**  
**Special Topics in Food Systems I**  
Students will engage in intensive study of a specific topic, as determined by the student and supervising faculty, and approved by the department. Students will study under the supervision and mentorship of a faculty member with requisite expertise in the area of study. Students will delineate learning objectives, develop a detailed study plan, conduct studies and submit a report(s).

Note: Students may repeat this course, to study different topics, for up to 6 credits total.

*Prerequisites: 60 credits (1100 or higher)*  
*Not Transferable*

**AGRI 3599** **3 Credits**  
**Directed Studies I**  
Students will carry out the study of a specific subject in sustainable agriculture under the direct supervision of a faculty member who will delineate learning objectives. The student will develop a detailed study plan, conduct studies and submit a report(s) or satisfactorily complete other means of evaluation which will include exams.

Note: Students may repeat this course, to study different subjects, for up to 9 credits total.

*Prerequisites: 60 credits (1100 or higher) and Permission of Instructor*  
*Not Transferable*

**AGRI 4190** **3 Credits**

**Agro-Ecosystems Management III**

Students will continue to build on integrated crop production principles and practices learned in previous Agro-Ecosystems Management courses. They will focus on fall operations including work scheduling, late season planting, season extension, fertility management, equipment use and maintenance, pest management, cool season cover cropping, harvest, post-harvest management, and record keeping.

*Prerequisites: AGRI 3390*

**AGRI 4295** **3 Credits**

**Internship**

Students will identify and participate in an approved internship in the agriculture and food systems sector for a minimum of 120 hours with supervision from a Sustainable Agriculture faculty member. Students will work toward completing specific outcomes and maintain records of their experience and upon completion will prepare a written report and give an oral presentation on their experience.

*Prerequisites: 15 credits including AGRI 1150*

*Not Transferable*

**AGRI 4298** **3 Credits**

**World Trends in Agriculture**

Students will explore global trends in agriculture and the relationships between production practices, markets, community and the environment. They will study the shifts in agriculture that have occurred in major regions of the world and impacts that agricultural practices have had on the regions over time.

*Prerequisites: 60 credits at the 1100 level or higher*

*Transferable (refer to transfer guide)*

**AGRI 4299** **3 Credits**

**Research Project II**

Students will complete, analyze, and present their applied research project from the previous research project course.

*Prerequisites: AGRI 3399*

**AGRI 4591** **3 Credits**

**Special Topics in Food Systems II**

Students will engage in intensive study of a specific topic, as determined by the student and supervising faculty, and approved by the department. Students will study under the supervision and mentorship of a faculty member with requisite expertise in the area of study. Students will delineate learning objectives, develop a detailed study plan, conduct studies and submit a report(s).

Note: Students may repeat this course, to study different topics, for up to 6 credits total.

*Prerequisites: 75 credits (1100 or higher) and Permission of Instructor*

*Not Transferable*

**AGRI 4599** **3 Credits**

**Directed Studies II**

Students will carry out the study of a specific subject in sustainable agriculture under the direct supervision of a faculty member who will delineate learning objectives. The student will develop a detailed study plan, conduct studies and submit a report(s) and/or satisfactorily complete other means of evaluation which will include exams.

Note: Students may repeat this course, to study different subjects, for up to 9 credits total.

*Prerequisites: 90 credits (1100 or higher) and Permission of Instructor*

*Not Transferable*