



MASTER COURSE OUTLINE

A. AGSC1010 Introduction to Agronomy

B. COURSE DESCRIPTION:

This course provides an orientation into the profession of agricultural sciences. Combining theoretical and practical knowledge, students investigate plants, the principles and practices of crop production and management, precision farming, sustainability, biotechnology, marketing and sales related to agriculture. A special emphasis on real-world, innovative problem solving will provide students with a background to further specialize in producing and improving food crops. Important current societal issues related to modern agriculture are discussed throughout.

(3 Cr – 3 lect, 0 lab)

C. **Core Theme: Critical Thinking

D. MAJOR CONTENT AREAS:

History and future of agronomy and agriculture

- What is agriculture
- History of agriculture
- Principles of agronomy
- Role of an agronomist

Classification and physiology of important agricultural plants

- Divisions of the plant kingdom
- Classification of crop plants
- Plant structure and function
- Ecological principles and Ecosystems
- Plant genetics and genetic engineering

Soil management, fertility and plant nutrition

- Structure and composition soil
- Plant fertility and fertilizers
- Soil fertility relationship to plant productivity
- Crop production and management

Precision Agriculture and GIS technologies

- Principles of geospatial technology and precision agriculture
- GIS use in agriculture

Systems approach to crop management

- Principles of a system-based approach to farming

Sustainable agriculture concepts

- Concepts of sustainable agriculture
- Techniques of sustainable agriculture
- The future of farming

Agribusiness

- Marketing
- Sales
- Management of a family farm

E. GOAL TYPES, OBJECTIVES, AND OUTCOMES:

<u>GOAL TYPE</u>	<u>OBJECTIVES</u>	<u>OUTCOMES</u>
**Critical Thinking	Students will be able to gather factual information and apply it to a given problem in a manner that is relevant, clear, comprehensive and conscious of possible bias in the information selected.	The student will successfully 1. investigate and complete an analysis of a current issue or problem related to agricultural science. 2. summarize and explain the context of the findings and the sources of possible bias in the analysis above. 3. design one or more innovative solutions based on the findings that address the current issue or problem.
<u>CS</u>	apply agricultural vocabulary appropriately.	1. define and explain the application of vocabulary terms related to agriculture.
<u>CS</u>	recognize and explain the importance of agriculture in human societies.	1. demonstrate an understanding of the effect of agricultural on human cultures and the role agronomists play in society.
<u>CS</u>	demonstrate an understanding of plants and soils as part of crop production.	1. identify important agricultural plants and explain the relationship of plants and soils. 2. recognize the behaviors and interactions of individual components within the growth system.
<u>CS</u>	understand the importance of technology related to agriculture.	1. provide an analysis of how technology relates to food production. 2. apply new and emerging technologies in scenario driven environments.

<u>CS</u>	recognize and evaluate potential ethical, legal and social issues related to a systems approach and how it relates to sustainable agriculture.	<ol style="list-style-type: none"> propose, articulate and defend a systems approach and sustainable farming techniques. make and defend conclusions predicting long term outcomes.
<u>CS</u>	demonstrate an understanding of the business of agriculture.	<ol style="list-style-type: none"> identify the important aspects of running a family farm. identify the important aspects of the agricultural industry. recognize the continually changing and ever complex agribusiness market.

F. SPECIAL INFORMATION:

This course may require use of the Internet, the submission of electronically prepared documents and the use of a course management software program. Students who have a disability and need accommodations should contact the instructor or the Student Success Center at the beginning of the semester. This information will be made available in alternative format, such as Braille, large print, or current media, upon request.

G. COURSE CODING INFORMATION:

Course Code C/Class Maximum 48; Letter Grade

Revision date: 09/02/15

AASC Approval date: 10/20/15

*Riverland Community College Disciplines	MnTC Goal Number
Communication (CM)	1
Natural Sciences (NS)	3
Mathematics/Logical Reasoning (MA)	4
History and the Social & Behavioral Sciences (SS)	5
Humanities and Fine Arts (HU)	6

**Riverland Community College Core Themes	MnTC Goal Number
Critical Thinking (CT)	2
Human Diversity (HD)	7
Global Perspective (GP)	8

Ethical and Civic Responsibility (EC)	9
People and the Environment (PE)	10

*These five MnTC Goals have been identified as Riverland Community College Disciplines.

** These five MnTC Goals have been identified as Riverland Community College Core Themes.

NOTE: The Minnesota Transfer Curriculum “10 Goal Areas of Emphasis” are reflected in the five required discipline areas and five core themes noted in the Riverland Community College program of study guide and/or college catalog.

Riverland