



MASTER COURSE OUTLINE

A. FSCI 1040 Food Processing

B. COURSE DESCRIPTION:

This course is designed to introduce the student to specific operations involved in the processing of raw foodstuffs into foods suitable for consumption or storage. Methods used to process and preserve a variety of foods will be examined. An emphasis will be placed on the investigation of various processing techniques that enhance food quality and/or control of microbial growth. The prevention of food spoilage will be a major focus of this course.

(3 Cr – 3 lect, 0 lab)

C. **Core Theme: Critical Thinking

D. RIVERLAND INSTITUTIONAL LEARNING OUTCOMES:

This course addresses the following Riverland Institutional Learning Outcome(s):

- ILO 1: critical thinking (*Core Theme Goal 2*)
- ILO 2: awareness of the larger global community (*Core Theme Goal 7 or 8*)
- ILO 3: ethical, engaged citizenship (*Core Theme Goal 9 or Goal 10*)
- ILO 4: communication and collaboration (*Discipline Goal 1 and by any learning outcome(s) involving communication or collaboration*)

E. MAJOR CONTENT AREAS:

- Basic food processing concepts and food handling procedures
- General food processing methods applied to dairy, egg, meat, and poultry, fats, sugars, beverages, cereals, fruits and vegetables, soybeans and chocolate
- Overview of microbes involved in food spoilage and the necessity of preservation as it applies to the production of a safe product.
- Food processing methods involving the use of:
 - Thermal/heat: pasteurization and blanching, commercial sterilization/retort
 - Nonthermal: chemical, pulsed electric field, high pressure, irradiation
 - Drying/dehydration
 - Refrigeration
 - Freezing/frozen food storage

- Acid control
- Extrusion

F. GOAL TYPES, OBJECTIVES, AND OUTCOMES:

<u>GOAL</u>	<u>OBJECTIVES</u> Students will be able to	<u>OUTCOMES</u> The student will successfully
<u>**Critical Thinking</u>	analyze the logical connections among the facts, goals, and implicit assumptions relevant to a problem or claim; generate and evaluate implications that follow from them.	<ol style="list-style-type: none"> 1. select a foodstuff and research its proper handling from point of origin to its processing, preservation and packing. 2. explain how food is transported and manipulated to achieve a final product.
<u>CS</u>	explore current practices of processing techniques.	<ol style="list-style-type: none"> 1. create a flow chart that shows the common steps involved in processing a variety of foodstuffs.
<u>CS</u>	explore the effects of processing parameters on product quality.	<ol style="list-style-type: none"> 1. explain how heat transfer, thermal and non-thermal methods impact the properties of foods.
<u>CS</u>	gain an understanding of the basic principles of food processing in order to achieve preservation.	<ol style="list-style-type: none"> 1. explain traditional and innovative technologies utilized in food processing to preserve food.

G. 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 Accessibility Services 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.

H. COURSE CODING INFORMATION:

Course Code C/Class Maximum: 48; Letter Grade

Revision date: 09/02/15; 10/04/22

AASC Approval date: 10/20/15; 10/18/22

*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.