



**COWLEY COLLEGE
& Area Vocational Technical School**

COURSE PROCEDURE FOR

**INTRODUCTION TO MILLING AND WHEAT
MLL3590 2 Credit Hours**

Student Level:

This course is open to high school and post-secondary level students.

Catalog Description:

MLL3590 – INTRODUCTION TO MILLING AND WHEAT (2 hrs) Students will be introduced to both the milling process and wheat. Students will exhibit an understanding of the milling industry, wheat production, characteristics of hard red winter wheat, wheat classes, grading, transportation, handling, and storage. Aspects of getting the wheat from the field to table will be fully explored.

Prerequisites:

None

Controlling Purpose:

This course is designed to help the student increase their knowledge regarding fundamentals of flour milling, the milling industry, and wheat classes and characteristics.

Learner Outcomes:

Upon completion of the course, the student will be able to demonstrate a knowledge of the role of milling in the food supply chain, organization and process structure, the wheat kernel classes and structural composition, wheat quality methods and grading standards, and wheat blending considerations.

Units Outcomes and Criterion Based Evaluation Key for Core Content:

The following defines the minimum core content not including the final examination period. Instructors may add other content as time allows.

Evaluation Key:

- A = All major and minor goals have been achieved and the achievement level is considerably above the minimum required for doing more advanced work in the same field.
- B = All major goals have been achieved, but the student has failed to achieve some of the less important goals. However, the student has progressed to the point where the goals of work at the next level can be easily achieved.
- C = All major goals have been achieved, but many of the minor goals have not been

achieved. In this grade range, the minimum level of proficiency represents a person who has achieved the major goals to the minimum amount of preparation necessary for taking more advanced work in the same field, but without any major handicap of inadequacy in his background.

- D = A few of the major goals have been achieved, but the student's achievement is so limited that he is not well prepared to work at a more advanced level in the same field.
- F = Failing, will be computed in GPA and hours attempted.
- N = No instruction or training in this area.

UNIT 1: Mill Industry Overview						
Outcomes: Upon completion of this unit, the students will be able to successfully describe the milling industry, the wheat kernel structure, and evaluation methods.						
A	B	C	D	F	N	Specific Competencies
						Demonstrate the ability to:
						Explain the supply chain from farm to fork.
						Describe the mill site structure and organization
						Identify measures of milling site production capacity, and grain based food consumption

UNIT 2: Wheat Composition and Characteristics						
Outcomes: Upon completion of this unit, the students will be able to successfully describe the composition and characteristics of the wheat kernel.						
A	B	C	D	F	N	Specific Competencies
						Demonstrate the ability to:
						Identify wheat kernel structures most important to millers.
						Identify chemical composition of the wheat kernel and their importance.
						Compare wheat to other grains including rice, corn and oats.

UNIT 3: North American Wheat Classes, Production and Movement

Outcomes: Upon completion of this unit, the students will be able to identify the major North American wheat classes and where each is grown, and describe the movement from field to elevator.

A	B	C	D	F	N	Specific Competencies
						Demonstrate the ability to:
						Identify six significant classes of U. S. wheat and compare them to Canadian wheat Classes.
						Identify important wheat class growing locations and uses.
						Describe chain of events that brings wheat to the mill elevator from the field.

UNIT 4: Wheat Quality Evaluation

Outcomes: Upon completion of this unit, the students will be able to successfully identify grading factors, the role of the laboratory in dough testing, and demonstrate grading standards and end-use properties.

A	B	C	D	F	N	Specific Competencies
						Demonstrate the ability to:
						Identify important grading factors and non-grade factors for wheat.
						Explain role of laboratory milling, flour physical and dough testing along with baking and processing tests.
						Indicate how grading standards relate to end use properties.

UNIT 5: Wheat Handling and Storage

Outcomes: Upon completion of this unit, the students will be able to successfully demonstrate storage risk factors, the blending process, and protein content.

A	B	C	D	F	N	Specific Competencies
						Demonstrate the ability to:
						Identify major wheat storage risk factors including moisture and environment.
						Explain role of fines and bin segregation in blending process
						Calculate a wheat blend targeting a specific protein content

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DISCLAIMER: THIS INFORMATION IS SUBJECT TO CHANGE. FOR THE OFFICIAL COURSE PROCEDURE CONTACT ACADEMIC AFFAIRS.

Projects Required:

As assigned

Textbook:

Contact Bookstore for current textbook.

Materials/Equipment Required:

Various wheat-based products readily available to consumers.

Attendance Policy:

Students should adhere to the attendance policy outlined by the instructor in the course syllabus.

Grading Policy:

The grading policy will be outlined by the instructor in the course syllabus.

Maximum class size:

Based on classroom occupancy

Course Timeframe:

The U.S. Department of Education, Higher Learning Commission and the Kansas Board of Regents define credit hour and have specific regulations that the college must follow when developing, teaching and assessing the educational aspects of the college. A credit hour is an amount of work represented in intended learning outcomes and verified by evidence of student achievement that is an institutionally-established equivalency that reasonably approximates not less than one hour of classroom or direct faculty instruction and a minimum of two hours of out-of-class student work for approximately fifteen weeks for one semester hour of credit or an equivalent amount of work over a different amount of time. The number of semester hours of credit allowed for each distance education or blended hybrid courses shall be assigned by the college based on the amount of time needed to achieve the same course outcomes in a purely face-to-face format.

Refer to the following policies:

[402.00 Academic Code of Conduct](#)

[263.00 Student Appeal of Course Grades](#)

[403.00 Student Code of Conduct](#)

Disability Services Program:

Cowley College, in recognition of state and federal laws, will accommodate a student with a documented disability. If a student has a disability, which may impact work in this class which requires accommodations, contact the Disability Services Coordinator.