



**COWLEY COLLEGE
& Area Vocational Technical School**

COURSE PROCEDURE FOR

**INTRODUCTION to WHEAT CLEANING and TEMPERING
MLL3591 2 Credit Hours**

Student Level:

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

Catalog Description:

MLL3591 – INTRODUCTION TO WHEAT CLEANING AND TEMPERING (3 hrs) Students will be introduced to the concepts and principles of the cleaning process, proper grain handling, cleaning machine operations, conditioning, control systems and flow sheets.

Prerequisites:

None

Controlling Purpose:

This course is designed to help the student increase their knowledge regarding fundamentals of grain handling, cleaning, conditioning, and control and flow sheets.

Learner Outcomes:

Upon completion of the course, the student will be able to demonstrate a knowledge of the cleaning process, proper grain handling, cleaning machinery, control systems, and flow sheets in the mill.

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: Preliminary Grain Cleaning and Grain Handling

Outcomes: Upon completion of this unit, the students will be able to successfully identify grain handling equipment, application, and operation

A	B	C	D	F	N	Specific Competencies
						Demonstrate the ability to:
						Identify grain handling equipment used in the milling industry.
						Explain grain handling equipment application and operation.
						Describe the importance of grain cleaning in the elevator and at the mill.

UNIT 2: Cleaning Machinery Principles

Outcomes: Upon completion of this unit, the students will be able to successfully describe the principles of grain cleaning and performance factors involved.

A	B	C	D	F	N	Specific Competencies
						Demonstrate the ability to:
						Describe principles of cleaning machinery operation.
						Identify important factors and adjustments contribution to operation of cleaning equipment
						Identify performance measures associated with proper operation of cleaning machinery

UNIT 3: Cleaning System Control

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:
						Describe measures of cleaning system performance.
						Identify important characteristics of screenings and clean wheat with respect to cleaning.
						Explain the critical nature of uniform flow on cleaning operation.

UNIT 4: Wheat Tempering

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 information required to calculate water addition requirements in a tempering system and calculate water addition requirements for a tempering system.
						Identify key components of a satisfactory tempering system.
						Explain manual and automated temper water addition systems including feed forward and feedback systems.
						Identify successful outcome of a good tempering system and identify potential causes of failure in wheat tempering.

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 Time frame:

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.