

**SEWARD COUNTY COMMUNITY COLLEGE  
COURSE SYLLABUS**

**I. TITLE OF COURSE:** CT2143- Coatings and Linings

**II. COURSE DESCRIPTION: 3 credit hours  
2 credit hours of lecture and 1 credit hours of lab per week.**

This course is an in-depth study of corrosion control with coatings and linings, which includes surface preparation, coating selection, coating application, inspection, and failure analysis. Rationale: Coatings and linings are the only protection from corrosion that is available in many environments. It has been estimated that the greatest loss of metal due to corrosion can be contributed to subsurface corrosion. This course teaches that student to maximize his company's coatings investment dollars.

For each unit of credit, a minimum of three hours per week with one of the hours for class and two hours for studying/preparation outside of class is expected.

Pre-requisite: None

**III. PROGRAM AND/OR DEPARTMENT MISSION STATEMENT:**

The Corrosion Technology program at Seward County Community College/Area Technical School provides students with the opportunity to develop and enhance their skills in the corrosion technology field through educational and technical instruction.

**IV. TEXTBOOK AND MATERIALS:**

Corrosion Prevention by Protective Coatings (2nd edition); Charles Munger; 1999 by NACE International. ISBN 1-57590-088-2.

**V. SCCC OUTCOMES**

Students who successfully complete this course will demonstrate the ability to do the following SCCC Outcomes.

- 1: Read with comprehension, be critical of what they read, and apply knowledge gained to real life
- 2: Communicate ideas clearly and proficiently in writing, appropriately adjusting content and arrangement for varying audiences, purposes, and situations.
- 3: Communicate their ideas clearly and proficiently in speaking, appropriately adjusting content and arrangement for varying audiences, purposes, and situations.
- 4: Demonstrate mathematical skills using a variety of techniques and technologies.
- 5: Demonstrate the ability to think critically by gathering facts, generating insights, analyzing data, and evaluating information
- 6: Exhibit skills in information and technological literacy

9: Exhibit workplace skills that include respect for others, teamwork competence, attendance/punctuality, decision making, conflict resolution, truthfulness/honesty, positive attitude, judgment, and responsibility

**VI. COURSE OUTCOMES:**

1. Students will identify the mechanisms used by specific coatings to control corrosion.
2. Students will obtain and apply the

- appropriate surface preparation and application procedures required for common coating materials from information in technical data sheets.
3. Students will operate, calibrate, and maintain all the common coating inspection instruments.
  4. Students will match appropriate coating formulations to specific corrosive environments.
  5. Students will identify the names, causes, and remedies for each of the common coating failures that are related to industrial painting.
  6. Students will demonstrate good work habits which include safety, cleanliness, efficiency, quality of work, and respect for expensive instrumentation.
  7. Students will illustrate their ability to manage projects, to manage their time, and demonstrate good work habits through punctuality, completion of assigned work on time, and respect for the attendance and honesty policies of SCCC.

## **VII. COURSE OUTLINE:**

1. Basic Corrosion Theory
2. Corrosion as Related to Coatings
3. Essential Coating Characteristics
4. Coating Fundamentals
5. Corrosion-Resistant Organic Coatings
6. Corrosion-Resistant Zinc Coatings
7. Structural Design for Coatings
8. Substrate Considerations
9. Surface Preparation
10. Application of Coatings
11. Coatings for Concrete
12. Coating Selections
13. Coatings and Cathodic Protection
14. Coating Failures, Repair, and Maintenance
15. Specifications, Inspection, and Training
16. Typical Uses of High-Performance Coatings

## **VIII. INSTRUCTIONAL METHODS:**

1. Class lecture
2. Demonstrations
3. Discussion
4. Small group
5. Lab practice

**IX. INSTRUCTIONAL AND RESOURCE MATERIALS:**

1. Corrosion Prevention by Protective Coatings (2nd edition); Charles Munger; 1999 by NACE International. ISBN 1-57590-088-2.

**X. METHODS OF ASSESSMENT:**

1. Outcome #1 will be assessed through exams, homework assignments, and projects
2. Outcome #2 will be assessed through classroom discussions, power point presentations
3. Outcome #3 will be assessed through hands on procedures, monitoring projects

**XI. ADA STATEMENT:**

Under the Americans with Disabilities Act, Seward County Community College will make reasonable accommodations for students with documented disabilities. If you need support or assistance because of a disability, you may be eligible for academic accommodations. Students should identify themselves to the Dean of Students at 620-417-1106 or going to the Student Success Center in the Hobbie Academic building, room 149 A.

Syllabus Reviewed: 6/23/2021