



9032

CORROSION PROTECTION
(11C)

30S/30E/30M

A Collision Repair and Refinishing Technology Course

9032: CORROSION PROTECTION (11C)

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Course Description

In this course, students will learn about corrosion, oxidation, and electrolysis, and the theory behind corrosion protection. They will learn to select materials, tools, and equipment for surface preparation; clean and sand substrates; apply masking materials; and operate and maintain spray guns in order to protect surfaces from corrosion.

Goal 1: Describe and apply appropriate **health and safety** practices.

GLO 1.1: Describe and apply appropriate **health and safety** practices.

- SLO 11C.1.1.1: Identify safety and health requirements. (A2.1)
- SLO 11C.1.1.2: Identify personal protective equipment (PPE) and procedures and describe the importance of using them. (A2.2) (TSA 16)
- SLO 11C.1.1.3: Identify electrical safety and outline the safety principles for working on and around electrical equipment. (A2.3) (TSA 18)
- SLO 11C.1.1.4: Identify fire safety practices and outline workplace fire safety principles. (A2.4) (TSA 19)
- SLO 11C.1.1.5: Recognize and control hazards. (A2.6)
- SLO 11C.1.1.6: Identify the hazards in confined spaces and the preparation needed to work in a confined space. (A2.7) (TSA 20)
- SLO 11C.1.1.7: Identify First Aid/CPR. (A2.8)
- SLO 11C.1.1.8: Explain the Workplace Hazardous Material Information System (WHMIS) and identify the WHMIS safety requirements. (A2.9) (TSA 13)
- SLO 11C.1.1.9: Identify and control hazards. (A2.10)
- SLO 11C.1.1.10: Identify safety precautions related to gas metal arc welding. (C2.2)
- SLO 11C.1.1.11: Identify and describe safety considerations and procedures related to fasteners and adhesives. (D2.1)
- SLO 11C.1.1.12: Practise safety precautions related to batteries. (B2.8)
- SLO 11C.1.1.13: Identify safety considerations when working with body fillers and abrasives. (F2.4)

SLO 11C.1.1.14: Create and maintain a safe and organized working environment.

SLO 11C.1.1.15: Follow guidelines listed in the Safe Work Procedure for specific tasks.

GLO 1.2: Demonstrate knowledge of the *Trade Safety Awareness Manual*.

No applicable SLOs.

Goal 2: Select, use, and manage **tools and equipment**.

GLO 2.1: Select and manage **tools and equipment**.

SLO 11C.2.1.1: Identify, describe, and demonstrate care and maintenance procedures related to tools and equipment. (A4.10, A4.17).

GLO 2.2: Use **tools and equipment**.

SLO 11C.2.2.1: Demonstrate the safe and appropriate use of tools and equipment.

SLO 11C.2.2.2: Identify types of refinishing and detailing tools and equipment, and describe their applications. (A4.9)

Goal 3: Demonstrate vehicle **damage analysis** and **repair estimation**.

GLO 3.1: Demonstrate vehicle **damage analysis**.

SLO 11C.3.1.1: Identify damage on corrosion-protected surfaces.

GLO 3.2: Demonstrate vehicle **repair estimation**.

No applicable SLOs.

Goal 4: Demonstrate **welding** procedures.

GLO 4.1: Demonstrate **welding** procedures.

No applicable SLOs.

Goal 5: Demonstrate **structural repair**.

GLO 5.1: Demonstrate an understanding of **vehicle construction**.

No applicable SLOs.

GLO 5.2: Demonstrate **measuring and gauging**.

No applicable SLOs.

GLO 5.3: Perform **structural repairs**.

No applicable SLOs.

Goal 6: Demonstrate **sheet metal repair**.

GLO 6.1: Demonstrate an understanding of the **properties** of metal.

SLO 11C.6.1.1: Discuss the processes of oxidation and electrolysis.

GLO 6.2: Repair sheet metal.

No applicable SLOs.

Goal 7: Select, use, and manage **seam sealers, fillers, and adhesives**.

GLO 7.1: Select, use, and manage **seam sealers** and **adhesives**.

SLO 11C.7.1.1: Identify types of adhesives and describe their applications. (D2.4)

SLO 11C.7.1.2: Identify considerations when applying and removing adhesives. (D2.5)

SLO 11C.7.1.3: Demonstrate removal of adhesives. (D2.6)

SLO 11C.7.1.4: Demonstrate the safe and appropriate identification, selection, application, maintenance, and management of seam sealers.

GLO 7.2: Select, use, and manage **fillers**.

- SLO 11C.7.2.1: Identify the types of body fillers, and describe their characteristics and applications. (F2.3)
- SLO 11C.7.2.2: Describe the techniques and procedures used to apply body fillers. (F2.5)
- SLO 11C.7.2.3: Describe the procedures and techniques for shaping and finishing body fillers. (F2.6)
- SLO 11C.7.2.4: Demonstrate proper surface preparations for application of body fillers. (F2.7)
- SLO 11C.7.2.5: Demonstrate mixing and applying fillers. (F2.8)
- SLO 11C.7.2.6: Demonstrate procedures and methods for detecting high and low spots. (F2.9)
- SLO 11C.7.2.7: Demonstrate the procedures and techniques for shaping and finishing fillers. (F2.10)
- SLO 11C.7.2.8: Perform procedures used to detect surface irregularities. (F2.11)

Goal 8: Select, use, and manage **fasteners**.

GLO 8.1: Select, use, and manage **fasteners**.

No applicable SLOs.

Goal 9: Demonstrate **glass repair and replacement**.

GLO 9.1: Demonstrate **glass repair and replacement**.

No applicable SLOs.

Goal 10: Demonstrate repair and replacement of **upholstery, trim, and hardware**.

GLO 10.1: Repair and replace **upholstery**.

No applicable SLOs.

GLO 10.2: Repair and replace **trim and hardware**.

No applicable SLOs.

Goal 11: Demonstrate surface preparation.**GLO 11.1: Select, use, and manage materials other than abrasives used in surface preparation.**

- SLO 11C.11.1.1: Identify products used to clean surfaces, their applications, and the procedures for use. (H1.2)
 - SLO 11C.11.1.2: Identify substrate types, and describe the procedures and considerations for evaluating their condition. (H1.3)
 - SLO 11C.11.1.3: Describe and demonstrate surface preparation of substrates. (H1.6)
 - SLO 11C.11.1.4: Describe and demonstrate masking and unmasking techniques. (H1.7).
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GLO 11.2: Select, use, and manage abrasives used in surface preparation.

- SLO 11C.11.2.1: Identify the types of abrasives, and describe their characteristics and applications. (F2.1)
 - SLO 11C.11.2.2: Describe the procedures and techniques for using abrasives. (F2.2)
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GLO 11.3: Prepare substrates.

- SLO 11C.11.3.1: Describe ideal working conditions for surface preparation. (H1.1)
 - SLO 11C.11.3.2: Identify topcoats and undercoats, and describe the procedures and considerations for evaluating their condition. (H1.4)
 - SLO 11C.11.3.3: Identify and describe the methods involved in stripping topcoats, undercoats, and paint. (H1.5)
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Goal 12: Demonstrate refinishing.**GLO 12.1: Demonstrate refinishing processes.**

- SLO 11C.12.1.1: Demonstrate the ability to apply primers. (H1.8)
 - SLO 11C.12.1.2: Demonstrate the ability to use proper spray gun technique and to maintain equipment. (H1.9)
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Goal 13: Demonstrate cleaning and detailing.**GLO 13.1: Demonstrate cleaning and detailing.**

- SLO 11C.13.1.1: Clean vehicles in order to prepare them for corrosion protection.
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Goal 14: Describe **vehicle systems**.

GLO 14.1: Describe **vehicle systems**.

No applicable SLOs.

Goal 15: Describe and demonstrate transferable **cross-curricular** knowledge and skills.

GLO 15.1: Read, interpret, and communicate information.

SLO 11C.15.1.1: Read, interpret, and communicate terminology related to corrosion protection.

GLO 15.2: Apply knowledge and skills from **mathematics**.

SLO 11C.15.2.1: Demonstrate trade-related calculations as specified by instructor. (B2.4)

SLO 11C.15.2.2: Demonstrate the correct use of ratios and proportions in the mixing of products.

GLO 15.3: Apply knowledge and skills from **information and communication technology**.

No applicable SLOs.

GLO 15.4: Apply knowledge and skills from the **sciences**.

No applicable SLOs.

Goal 16: Understand **career opportunities** and the **working environment**.

GLO 16.1: Describe **education, career opportunities, professional organizations, and working environments** related to collision repair and refinishing technology and associated fields.

SLO 11C.16.1.1: Describe apprenticeship, education, career opportunities, and professional organizations related to corrosion protection.

SLO 11C.16.1.2: Describe working environments related to corrosion protection.

Goal 17: Demonstrate an awareness of **sustainability**.

GLO 17.1: Describe the effects of collision repair and refinishing technology on **human health and well-being**, including on tradespersons working in the field and those who use their services.

SLO 11C.17.1.1: Demonstrate the use of dust collection systems.

GLO 17.2: Describe collision repair and refinishing technology's **sustainability practices** and **impact on the environment**.

SLO 11C.17.2.1: Follow environmentally appropriate procedures in the disposing and recycling of hazardous materials.

Goal 18: Demonstrate an awareness of **ethical and legal standards** as they pertain to collision repair and refinishing technology.

GLO 18.1: Practise **ethical and legal standards** as they pertain to collision repair and refinishing technology.

No applicable SLOs.

Goal 19: Demonstrate **employability skills**.

GLO 19.1: Demonstrate fundamental **employability skills**.

SLO 11C.19.1.1: Demonstrate regular and punctual attendance.

SLO 11C.19.1.2: Demonstrate the ability to communicate respectfully and effectively with teachers, supervisors, co-workers, and students.

SLO 11C.19.1.3: Demonstrate accountability by taking responsibility for own actions.

SLO 11C.19.1.4: Demonstrate adaptability, initiative, and effort.

SLO 11C.19.1.5: Demonstrate teamwork skills.

SLO 11C.19.1.6: Demonstrate the ability to stay on task and effectively use time in class and work environments.

SLO 11C.19.1.7: Demonstrate the responsible use of wireless communication devices.

GLO 19.2: Demonstrate an awareness of **cultural proficiency** and its importance in the workplace.

No applicable SLOs.

GLO 19.3: Demonstrate an understanding of the **business operation** of a collision repair and refinishing technology facility.

No applicable SLOs.

GLO 19.4: Demonstrate **critical thinking skills** in planning, procedures, analysis, and diagnosis.

SLO 11C.19.4.1: Discuss the need for critical thinking.

SLO 11C.19.4.2: Discuss the need for problem-solving skills.

Goal 20: Demonstrate an understanding of the **evolution** of collision repair and refinishing technology, including its **technological progression and emerging trends**.

GLO 20.1: Describe the **evolution** of collision repair and refinishing technology, including its **technological progression and emerging trends**.

SLO 11C.20.1.1: Discuss the evolution of corrosion protection, including its technological progression and emerging trends.
