

# Mechatronics Systems (2025)

## Electrical and Robot Systems

- 1 Understand the hazards of electromechanical equipment and apply safe working practices.** 7106.D1.1

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- 2 Describe the basic functions and design of a robotic mechatronic system.** 7106.D1.2

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- 3 Apply basic knowledge of robot physics in a mechatronics system.** 7106.D1.3

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- 4 Explain the role of various electrical components within a robotic mechatronic system.** 7106.D1.4

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- 5 Trace and describe the flow of energy and information in a robotic mechatronic system.** 7106.D1.5

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- 6 Describe the basic physical properties of electrical components.** 7106.D1.6

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- 7 Read, analyze, and utilize technical documents such as data sheets, timing diagrams, operational manuals, schematics, etc. for a mechatronic system.** 7106.D1.7

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- 8 Carry out measurements and adjustments on electrical components/circuits in a mechatronic system.** 7106.D1.8

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- 9 Localize, identify, document and correct (where possible) malfunctions in electrical circuits, based upon the technical documentation.** 7106.D1.9

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- 10 Transfer the knowledge learned from one system to another system.** 7106.D1.10

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- 11 Effectively use current and emerging computer technologies when applicable.** 7106.D1.11

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- 12 Demonstrate ability to read and interpret technical documents.** 7106.D1.12

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- 13 Demonstrate the ability to use various types of software applicable to course.** 7106.D1.13

## Mechanical Systems

- 1 Understand the hazards of electromechanical equipment and apply safe working practices.** 7106.D2.1

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- 2 Explain the role of various mechanical components within a given system or module.** 7106.D2.2

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- 3 Trace and describe the flow of energy in a given mechatronic system or subsystem.** 7106.D2.3
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- 4 Describe the basic physical properties of mechanical components including materials, lubrication requirements, and surface properties.** 7106.D2.4
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- 5 Carry out adjustments on mechanical components in a mechatronic system.** 7106.D2.5
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- 6 Read, analyze, and utilize the technical data sheets for the mechanical components and electrical drives within a mechatronic system.** 7106.D2.6
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- 7 Correctly localize, identify and document causes of malfunctions in mechanical components or electrical drives, based upon the technical documentation.** 7106.D2.7
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- 8 Correct malfunctions where possible, or correctly identify the expertise required to correct a malfunction.** 7106.D2.8
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- 9 Transfer the knowledge learned from one system to another system.** 7106.D2.9
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- 10 Effectively use current and emerging computer technologies when applicable.** 7106.D2.10
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- 11 Demonstrate ability to read and interpret technical documents.** 7106.D2.11
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- 12 Demonstrate the ability to use various types of software applicable to course.** 7106.D2.12