

# SLO Presentation

---

PMT

Date: 09-15-2022

## ISLO

### Civic Engagement

- Students will develop values and beliefs in their role as a member of local, national and global societies to promote truth, fairness and goodwill to others. They will use the democratic process to further their values and beliefs and recognize and accept differing perspectives based on cultural diversity. They will engage in actions which provide service to others and have a positive impact on their local community.

### Communication and Expression

- Students will demonstrate the ability to effectively and appropriately communicate their thoughts and ideas both in written and oral forms. They will develop verbal and non-verbal delivery skills, in an appropriate manner, to communicate their ideas as well as evaluate the ideas of others in a wide variety of contexts.

### Critical Thinking and Quantitative Reasoning

- Students will demonstrate the ability to recognize assumptions within an argument and actively and skillfully analyze underlying reasoning to develop a conclusion. They will apply qualitative and/or quantitative analysis to solve problems, predict outcomes, test hypotheses, and explore alternatives in an ethical manner.

### Information Literacy

- Students will demonstrate the ability to determine when gathering additional information is necessary. They will use appropriate resources and technologies to locate, evaluate and incorporate the information when developing supporting arguments and drawing conclusions. Students will also develop the ability to understand any legal, ethical or social issues regarding the use of information.

### Personal Knowledge and Responsibility

- Students will develop the necessary skills to define, maintain and complete their personal educational goals. They will learn to work independently to accomplish personal goals toward realizing their full potential academically, physically and emotionally whether for personal enrichment, further education or career advancement.

Technology
PMT
<b>Composite Inspection</b> <ul style="list-style-type: none"><li>• Student demonstrate safe work habits around plastics machinery.</li><li>• Student utilize non-destructive procedures to inspect the quality of a manufactured part.</li><li>• Students communicate clear technical instructions.</li><li>• Students differentiate between the various types of plastic.</li><li>• Students use percentages to mix resins, fillers, and colors.</li><li>• Students use physical testing to validate the strength of a manufactured part.</li><li>• Students utilize ratios and fractions to mix materials.</li></ul>
<b>Composite Inspection--Degree</b> <ul style="list-style-type: none"><li>• Student demonstrate safe work habits around plastics machinery.</li><li>• Student utilize non-destructive procedures to inspect the quality of a manufactured part.</li><li>• Students communicate clear technical instructions.</li><li>• Students differentiate between the various types of plastic.</li><li>• Students identify by visual inspection the quality of a manufactured part.</li><li>• Students use percentages to mix resins, fillers, and colors.</li><li>• Students use physical testing to validate the strength of a manufactured part.</li><li>• Students utilize ratios and fractions to mix materials.</li></ul>
<b>Composite Manufacturing--Degree</b> <ul style="list-style-type: none"><li>• Student demonstrate safe work habits around plastics machinery.</li><li>• Students communicate clear technical instructions.</li></ul>

- Students differentiate between the various types of plastic.
- Students employ shop drawings to produce plastic parts to drawing specifications.
- Students identify the specific applications of plastic resin systems.
- Students recognize the process for manufacturing various plastic parts.
- Students use percentages to mix resins, fillers, and colors.
- Students utilize ratios and fractions to mix materials.
- Students demonstrate safe work habits around plastics machinery.
- Students communicate clear technical instructions.
- Students differentiate between the various types of plastic.
- Students employ shop drawings to produce plastic parts to drawing specifications.
- Students identify the specific applications of plastic resin systems.
- Students recognize the process for manufacturing various plastic parts.
- Students use percentages to mix resins, fillers, and colors.
- Students utilize ratios and fractions to mix materials.

### **Plastics Manufacturing**

- Students demonstrate safe work habits around plastics machinery.
- Students recognize various types of equipment used for manufacturing plastic parts.
- Students communicate clear technical instructions.
- Students differentiate between the various types of plastic.
- Students fabricate plastic components and utilize finishing techniques.
- Students identify different plastic manufacturing processes.
- Students use percentages to mix resins, fillers, and colors.
- Students utilize ratios and fractions to mix materials.

### **Plastics Manufacturing--Degree**

- Student demonstrate safe work habits around plastics machinery.
- Student recognize various types of equipment used for manufacturing plastic parts.
- Students communicate clear technical instructions.
- Students differentiate between the various types of plastic.
- Students fabricate plastic components and utilize finishing techniques.
- Students identify different plastic manufacturing processes.
- Students use percentages to mix resins, fillers, and colors.
- Students utilize ratios and fractions to mix materials.

### **Plastics/Composites Manufacturing Technology--Cert**

- Students communicate clear technical instructions.
- Students use percentages to mix resins, fillers, and colors.
- Students utilize ratios and fractions to mix materials.
- Student demonstrate safe work habits around plastics machinery.
- Students differentiate between the various types of plastic.

### **Tool Design**

- Students demonstrate safe work habits around plastics machinery.
- Students communicate clear technical instructions.
- Students differentiate between the various types of plastic.

- Students identify the strength and integrity of a mold through visual and physical inspection.
- Students recognize the production process for various molds.
- Students recognize the temperature range of the plastics material for molding.
- Students use computer generated engineering data to analyze proper tooling techniques.
- Students use percentages to mix resins, fillers, and colors.
- Students utilize ratios and fractions to mix materials

### **Tool Design - AA**

- Students demonstrate safe work habits around plastics machinery.
- Students communicate clear technical instructions.
- Students differentiate between the various types of plastic.
- Students identify the strength and integrity of a mold through visual and physical inspection.
- Students recognize the production process for various molds.
- Students recognize the temperature range of the plastics material for molding.
- Students use computer generated engineering data to analyze proper tooling techniques.
- Students use percentages to mix resins, fillers, and colors.
- Students utilize ratios and fractions to mix materials

### **CSLO**

#### **PMT100 - Plastics Technology**

- Identify (4) basic plastics processing methods during examination.
- Demonstrate proficiency at identifying (2) plastic material and part recycling methods found in industry today during examination.
- Demonstrate proficiency in identifying (4) plastic materials during examination.
- Identify and differentiate between thermoplastics and thermosetting materials during examination.

#### **PMT101 - Sustainable Toy Design with Solidworks**

- A. Classify basic 3D modeling methods
- B. Design basic 3D parts using Solidworks
- C. Create basic bottom up assemblies using Solidworks
- D. Create sustainable toy design with Solidworks
- E. Fabricate the toy parts through laser cutting/3D printing
- F. Interpret the environment assessment results and know how to improve the design based on the results

#### **PMT151 - Composites Fabrication**

- Students will be able to identify (2) methods for fabricating a composite part during examination.
- Students will be able to describe safe handling procedures or composite fabrication during examination.
- Students will be able to distinguish between various composite reinforcement materials utilized in fabrication during examination.
- Students recognize composite structure materials utilized in fabrication during examination.

#### **PMT152 - Composite Air-frame Assembly**

- Students identify different type of aircraft fasteners
- Students can identify different composites materials
- Students assemble leak free bag for production of prepreg part
- Students produce composites parts
- Students use fasteners to assemble composite parts
- Students trim and drill composites parts
- Students assemble metal parts to composites parts

- Students use adhesives to assemble parts
- Students inspect and perform corrective actions on composites parts assembly
- Students inspect assembly for dimensional tolerances/fit and inspect for corrosion
- Student to read aircraft drawings to build parts

### **PMT153 - Composites Repair**

- Recognize two (2) typical composite repair methods during examination.
- Distinguish between three (3) composite reinforcement materials typically utilized in composite repair methods during examination.
- Describe safe handling procedures of two (2) common tools utilized during composite repair methods during examination.
- Recognize two (2) composite honeycomb sandwich materials typically utilized in repair of flat panels during examination.

### **PMT159 - Injection Molding I**

- Produce a part following industry standardized practices during examination.
- Distinguish between (3) major thermoplastic materials used in industry during examination.
- Demonstrate of visual inspect (3) parts for defects such as shrinkage, warp and inclusions during evaluation.
- Describe methods to increase manufacturing production rate in molding during examination.

### **PMT161 - Fiberglass Technology**

- Students will be able to identify four (4) types of fiberglass materials during examination.
- Students will be able to perform the Barcol hardness test on four (4) flat fiberglass panels during examination.
- Students will be able to identify (3) fiberglass fabrication methods during examination.

### **PMT172 - Tooling for Composites**

- Identify (3) materials and processes used to create standard types of tooling for plastics during examination.
- Identify (2) tooling methods and safe handling practices used in the plastic industry during examination.
- Identify (2) methods for producing a part for tooling during examination.
- Recognize (3) typical hand tools utilized in the making of tools/molds during examination.

### **PMT176 - Fiberglass and Vacuum Infusion Process Technology**

- Demonstrate the basic knowledge in RTM fabrication techniques by identifying four (4) materials utilized in producing an infusion molded part during examination.
- Demonstrate competency in safe handling of two (2) materials utilized in the RTM process during examination.
- Identify two (2) tooling methods and safe handling practices used in the VIP and RTM industry during examination.
- Identify and differentiate the processing method utilized to mold four (4) different plastic parts during examination.
- Differentiate between the various types of plastic.
- Communicate clear technical instructions
- Identify the specific applications of plastic resin systems.
- Demonstrate safe work habits around plastics machinery.
- Communicate clear technical instructions

### **PMT221 - Modelmaking**

- Students will be able to be able to identify (4) basic modelmaking materials for producing models during examination.
- Students will be able to identify and differentiate between thermoplastics and thermosetting modelmaking materials during examination.
- Students will be able to identify safe material handling techniques and industrial modelmaking practices during examination.
- Students will be able to select (2) modelmaking methods during examination.