



Cerritos College
ARTICULATION AGREEMENT

<p>Cerritos College Course: PMT 151 Composites Fabrication (2 units)</p> <p>Cerritos College 11110 Alondra Blvd. Norwalk, CA 90650</p>	<p>High School Course: Plastics Composites Fabrication and Injection Molding</p> <p>Warren High School 8141 De Palma Street Downey, CA 90241</p>
<p>General Course Description: This Capstone course provides students with theory and hands-on exposure to fabrication methods with high-tech materials. Areas of concentration will include composite structures, material choices, design of composite structures, surface bonding, fastener installation, inspection processes, and approved repair methods. Fabrication, safety procedures, and material handling are also covered. Additionally, the course introduces the fundamentals of set-up and operation of injection molding equipment as found in industry. Training on actual industrial equipment, and safe material and equipment handling, is stressed.</p> <p>The Plastics Engineering and Sustainability pathway encompasses plastic products' processing, design, development, and manufacturing. Student hands-on, industry-relevant practice includes working with materials properties and applications, polymer structure and characterization, sustainability, plastics processing and packaging, computer-aided design, and novel and emerging technologies.</p>	
<p>College Prerequisite(s): none</p>	<p>HS Prerequisite(s): Plastics Technologies</p>
<p>Advisories/Recommendations: none</p>	
<p>Course Content:</p> <ol style="list-style-type: none"> 1. Safety Procedures <ul style="list-style-type: none"> • Materials Safety Data Sheet (MSDS) • Shop safety Terminology <ul style="list-style-type: none"> ○ Composite materials ○ Fabrication terms 2. Industry Developments and Trends <ul style="list-style-type: none"> • Resin transfer molding (RTM) • Tow placement • Ply cutting • Infusion 	

3. Composite Structures
 - Cored structures
 - Hybrid structures
4. Design and Ply Orientation Considerations
 - Balanced structures
 - Unbalanced structures
5. Composite Materials
 - Resins
 - Reinforcements
 - Stresses/loads
 - Distribution/attachments
6. Secondary Bonding
 - Surface preparation
 - Materials
 - Testing/integrity
7. Fasteners and Attachments
 - Potting
 - Load transmission/distribution
 - Design requirements
8. Inspection Processes
 - Nondestructive testing (NDT)
 - Ultrasonic
 - X-ray
 - Visual 2
 - Damage inspection
 - Non-structural
 - Structural
 - Test coupons
 - Property verification
 - Process control validation
9. High Performance Composites
10. Composites Technology
11. Introduction to SAMPE and ACME Societies
12. Soft Skills in Aerospace Composites Manufacturing I
13. Preparation for a Composites Technician Interview

Competencies and Skill Requirements.**At the conclusion of this course, the student should be able to:**

- Identify two methods for fabricating a composite part.
- Describe safe handling procedures for composite fabrication.
- Distinguish between various composite reinforcement materials utilized in fabrication.
- Recognize composite structure materials utilized in fabrication.

Measurement Methods:

- Projects
- Lab performance
- Quizzes Tests
- Final exam
- Student notebooks
- Participation

Textbooks or Other Support Materials:

- Essentials of Advanced Composites Fabrication and Repair, 2019 or current edition. ISBN 978-1619547629 Aviation Supplies and Academics, Inc. Publisher

Procedures for Course Articulation:

Cerritos College credit for the articulated course listed above may be received when the following criteria are met:

1. Student has completed the articulated course listed above, *Plastics Composites Fabrication and Injection Molding*, with a grade of “C” or higher.
3. Student must enroll at Cerritos College within two (2) years from the semester date in which the course was completed.
4. Student will complete and submit the Cerritos College *Petition for Credit by Examination for Articulated High School Course* form to the Office of Educational Partnerships & Programs at Cerritos College.
5. A maximum of 30 units may be awarded through credit by examination.

This Agreement will be reviewed annually and will remain in effect until cancelled by either party giving 30 days written notice.

High School/ROP District Signatures**Cerritos College Signatures**

	Jun 27, 2023	 Miodrag Micić (Jun 28, 2023 20:11 PDT)	Jun 28, 2023
Instructor/Department Chair	Date	Faculty/Department Chair	Date
<i>Cari White</i>	Jun 28, 2023	 Yannick Rault (Jun 28, 2023 20:23 PDT)	Jun 28, 2023
Principal	Date	Dean of Instruction	Date
<i>John A. Garcia, Jr.</i>	Jun 28, 2023	<i>Wei Zhou</i> Wei Zhou (Jun 29, 2023 08:28 PDT)	Jun 29, 2023
Superintendent	Date	Vice President	Date