



## COURSE OUTLINE: ASR109 - PLASTICS & SEALANTS

Prepared: Paul Davis

Approved: Corey Meunier, Chair, Technology and Skilled Trades

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| <b>Course Code: Title</b>                                             | ASR109: PLASTICS & SEALANTS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                 |
| <b>Program Number: Name</b>                                           | 4067: AIRCRAFT STRUCT TECH                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                 |
| <b>Department:</b>                                                    | AIRCRAFT STRUCTURAL REPAIR                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                 |
| <b>Semesters/Terms:</b>                                               | 20W                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                 |
| <b>Course Description:</b>                                            | The proper methods used to manufacture and repair aircraft plexiglass parts will be learned through a combination of in-class theory and shop demonstrations. Various types of aircraft sealants will be discussed.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                 |
| <b>Total Credits:</b>                                                 | 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                 |
| <b>Hours/Week:</b>                                                    | 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                 |
| <b>Total Hours:</b>                                                   | 32                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                 |
| <b>Prerequisites:</b>                                                 | There are no pre-requisites for this course.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                 |
| <b>Corequisites:</b>                                                  | There are no co-requisites for this course.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                 |
| <b>Vocational Learning Outcomes (VLO's) addressed in this course:</b> | <b>4067 - AIRCRAFT STRUCT TECH</b><br>VLO 2 Demonstrate a working knowledge of the principles of aircraft design by applying theory and shop practice.<br>VLO 4 Read and follow blueprint, shop drawings and manufacturer's manuals necessary in all manufacturing and overhaul facilities.<br>VLO 6 Carry out any repair according to specifications, stated job procedures and the requirements of the Department of Transport Regulations.                                                                                                                                                                                                                                                                                                                               |                                                 |
| <b>Essential Employability Skills (EES) addressed in this course:</b> | EES 1 Communicate clearly, concisely and correctly in the written, spoken, and visual form that fulfills the purpose and meets the needs of the audience.<br>EES 2 Respond to written, spoken, or visual messages in a manner that ensures effective communication.<br>EES 4 Apply a systematic approach to solve problems.<br>EES 5 Use a variety of thinking skills to anticipate and solve problems.<br>EES 6 Locate, select, organize, and document information using appropriate technology and information systems.<br>EES 7 Analyze, evaluate, and apply relevant information from a variety of sources.<br>EES 10 Manage the use of time and other resources to complete projects.<br>EES 11 Take responsibility for ones own actions, decisions, and consequences. |                                                 |
| <b>Course Evaluation:</b>                                             | Passing Grade: 70%, B                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                 |
| <b>Other Course Evaluation &amp; Assessment Requirements:</b>         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                 |
| <b>Course Outcomes and Learning Objectives:</b>                       | <b>Course Outcome 1</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | <b>Learning Objectives for Course Outcome 1</b> |



SAULT COLLEGE | 443 NORTHERN AVENUE | SAULT STE. MARIE, ON P6B 4J3, CANADA | 705-759-2554

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|  | 1. Select and describe plastic groups, form drill and saw plastics and complete permanent or temporary repairs.                                                                                    | 1.1 identify and describe the common groups of plastics<br>1.2 demonstrate general handling and storage procedures for plastics<br>1.3 demonstrate approved cleaning and maintenance procedures dealing with plastics<br>1.4 discuss the various methods of forming plastics<br>1.5 describe single and compound curve forming of plastic sheets<br>1.6 identify the various methods of cementing plastics<br>1.7 discuss the types of transparent plastics found on aircraft<br>1.8 explain the difference between thermo plastics and thermo setting plastics<br>1.9 identify the advantages and disadvantages of plexiglass Vs glass wind screens<br>1.10 identify transparent plastics and laminated plastics<br>1.11 discuss safety precautions associated with mixing glues and repair chemicals used to repair plastics |
|  | <b>Course Outcome 2</b>                                                                                                                                                                            | <b>Learning Objectives for Course Outcome 2</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|  | 2. Select proper sealants for repairs by reading charts, remove old sealants, mix and apply sealants to various repairs, discuss pressure sealing and understand the personal safety requirements. | 2.1 describe the term structural sealing and how it applies to various sections of an aircraft structure<br>2.2 identify the various sealants required for a repair by referring to charts<br>2.3 remove sealants as per assignments<br>2.4 complete various types of sealant repairs<br>2.5 discuss various terms associated with sealants<br>2.6 discuss pressure sealing of aircraft structures<br>2.7 identify and operate the equipment used to apply sealants to aircraft structures<br>2.8 identify one part sealants and two part sealants<br>2.9 describe when sealants should be replaced<br>2.10 discuss personal safety precautions when mixing or applying aircraft sealants                                                                                                                                      |

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| <b>Evaluation Process and Grading System:</b> | <b>Evaluation Type</b> | <b>Evaluation Weight</b> |
|                                               | Assignments            | 10%                      |
|                                               | Test #17               | 45%                      |
|                                               | Test #25               | 45%                      |

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| <b>Date:</b>     | August 29, 2019                                                                                        |
| <b>Addendum:</b> | Please refer to the course outline addendum on the Learning Management System for further information. |

