Maryland CTE Program of Study

**Autobody/Collision Repair Technician**

Maryland State Department of Education

Division of Career and College Readiness

200 West Baltimore Street

Baltimore, Maryland 21201-2595

This agreement is between the Division of Career and College Readiness (DCCR), Maryland State Department of Education, and the local school system listed below.

**LOCAL SCHOOL SYSTEM INFORMATION –** Complete the information requested below, including the original signature of the CTE local director.

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| --- | --- |
| Local School System (LSS) and Code: |  |
| Name of CTE local director: |  | Phone: |  |
| LSS Career Cluster: |  |
| LSS Program Title: | **Autobody/Collision Repair Technician** |
| Pathway Options: | 1. | 2. | 3. |
| Value Added [ ]  yes [ ]  no This program provides students the opportunity to earn early college credit. The academic and Options: technical course sequences for both secondary and postsecondary programs are included herein. [ ]  yes [ ]  no Enclosed is a copy of the articulation agreement (Copy required for CTE program approval if the program is articulated with a postsecondary education provider). [ ]  yes [ ]  no This program provides students with the opportunity to earn an industry-recognized credential. The credential is identified herein.  |
| Program Start Date: |  |  |  |
| Signature of CTE Local Director: |  | Date: |  |
| Signature of Local Superintendent: |  | Date: |  |

**TO BE COMPLETED BY MSDE/DCTAL**

|  |  |
| --- | --- |
| Date Program Proposal received by CTE Systems Branch: |  |
| CTE Control Number: |  | Fiscal Year: |  |
| CIP Number: | Program: **47.0635**  | Pathway Option 1:  | PathwayOption 2:  | PathwayOption 3: |
| MSDE Cluster Title: |  |

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| --- | --- | --- |
| **Approval Starts FY: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** |  |  |
|  |  |  |
| Signature, Assistant State Superintendent, Career and College Readiness |  | Date |

**CTE Secondary Program Proposal Contents**

**STEP 1A: PROGRAM ADVISORY COMMITTEE MEMBERS AND THEIR AFFILIATIONS**

Complete the list of the Program Advisory Committee (PAC) members. Members should include employers, local workforce development representatives, economic development personnel, business, or labor representatives, and the remainder should include secondary and postsecondary, academic and technical educators and other stakeholders. Place a check in the appropriate box to indicate the role each person plays. Include all of the information requested for each entry. Use this form or a locally developed form – either one is acceptable as long as all information is provided.

# Program Advisory Committee List

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| **Membership: First entry should be the industry representative who is leading the PAC.** |
| PAC Leader Name: |  | Representation: |
| Title: |  | [ ]  Industry [ ]  Secondary [ ]  Postsecondary  |
| Affiliation: |  |
| Address1: |  |
| Address2: |  |
| City, State, Zip: |  | State: |  | Zip |  |
| Phone: |  | Fax: |  |
| Email: |  |
| Area of Expertise: |  |
| Role: | [ ]  Work-based Learning [ ]  Curriculum Development [ ]  Skills Standards Validation [ ]  Staff Development |
| [ ]  Program Development  | [ ]  Other (specify):  |  |

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| --- | --- | --- |
| Name: |  | Representation: |
| Title: |  | [ ]  Industry [ ]  Secondary [ ]  Postsecondary  |
| Affiliation: |  |
| Address1: |  |
| Address2: |  |
| City, State, Zip: |  | State: |  | Zip |  |
| Phone: |  | Fax: |  |
| Email: |  |
| Area of Expertise: |  |
| Role: | [ ]  Work-based Learning [x]  Curriculum Development [ ]  Skills Standards Validation [ ]  Staff Development |
| [x]  Program Development  | [ ]  Other (specify):  |  |

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| Name: |  | Representation: |
| Title: |  | [ ]  Industry [ ]  Secondary [ ]  Postsecondary  |
| Affiliation: |  |
| Address1: |  |
| Address2: |  |
| City, State, Zip: |  | State: |  | Zip |  |
| Phone: |  | Fax: |  |
| Email: |  |
| Area of Expertise: |  |
| Role: | [ ]  Work-based Learning [ ]  Curriculum Development [ ]  Skills Standards Validation [ ]  Staff Development |
| [ ]  Program Development  | [ ]  Other (specify):  |  |

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| Name: |  | Representation: |
| Title: |  | [ ]  Industry [ ]  Secondary [ ]  Postsecondary  |
| Affiliation: |  |
| Address1: |  |
| Address2: |  |
| City, State, Zip: |  | State: |  | Zip |  |
| Phone: |  | Fax: |  |
| Email: |  |
| Area of Expertise: |  |
| Role: | [ ]  Work-based Learning [ ]  Curriculum Development [ ]  Skills Standards Validation [ ]  Staff Development |
| [ ]  Program Development  | [ ]  Other (specify):  |  |

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| Name: |  | Representation: |
| Title: |  | [ ]  Industry [ ]  Secondary [ ]  Postsecondary  |
| Affiliation: |  |
| Address1: |  |
| Address2: |  |
| City, State, Zip: |  | State: |  | Zip |  |
| Phone: |  | Fax: |  |
| Email: |  |
| Area of Expertise: |  |
| Role: | [ ]  Work-based Learning [ ]  Curriculum Development [ ]  Skills Standards Validation [ ]  Staff Development |
| [ ]  Program Development  | [ ]  Other (specify):  |  |

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| --- | --- | --- |
| Name: |  | Representation: |
| Title: |  | [ ]  Industry [ ]  Secondary [ ]  Postsecondary  |
| Affiliation: |  |
| Address1: |  |
| Address2: |  |
| City, State, Zip: |  | State: |  | Zip |  |
| Phone: |  | Fax: |  |
| Email: |  |
| Area of Expertise: |  |
| Role: | [ ]  Work-based Learning [ ]  Curriculum Development [ ]  Skills Standards Validation [ ]  Staff Development |
| [ ]  Program Development  | [ ]  Other (specify):  |  |
| Name: |  | Representation: |
| Title: |  | [ ]  Industry [ ]  Secondary [ ]  Postsecondary  |
| Affiliation: |  |
| Address1: |  |
| Address2: |  |
| City, State, Zip: |  | State: |  | Zip |  |
| Phone: |  | Fax: |  |
| Email: |  |
| Area of Expertise: |  |
| Role: | [ ]  Work-based Learning [ ]  Curriculum Development [ ]  Skills Standards Validation [ ]  Staff Development |
| [ ]  Program Development  | [ ]  Other (specify):  |  |

STEP 1B: DOCUMENTED LABOR MARKET DEMAND – Check the appropriate box below.

[x]

Demand exists

The PAC will review labor market information on a local, regional and/or state basis. Check this box if demand exists for the identified occupations. The labor market information does not need to be provided with the proposal as long as there is a demand for employees according to data provided by the Department of Labor, Licensing and Regulation (DLLR) or documented by employers in letters or other correspondence.

[ ]  If evidence for labor market demand is not readily available, attach documentation to the proposal.

Check this box if there is a unique labor market demand for a program and data are not available from the Department of Labor, Licensing and Regulation (DLLR). If the occupation is new or emerging and no data exist, supporting evidence is submitted with the proposal (i.e. document local, national, or regional trends, local circumstances, or provide letters from employers or local economic/workforce development offices documenting employment demand including the projected number of openings by pathway).

**STEP 2A: PROGRAM OVERVIEW** – After determining the cluster and pathway options, identify the standards used to develop the CTE program of study. Describe the program to be developed in detail based on what students are expected to know and be able to demonstrate as a result of participating in the program.

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| **Indicate the title and source of the skills standards for this program: National Automotive Technicians Education Foundation (NATEF) Autobody/Collision**  |

**Program Overview:** The Collision Repair and Refinishing program is a CTE pathway program. It combines technical, academic and workplace skills in an integrated curriculum in accordance with The Inter-Industry Conference on Auto Collision Repair (I-CAR ) curriculum programs, all National Automotive Technicians Education Foundation (NATEF) Skill/Program Certification standards, and Automotive Service Excellence (ASE) guidance and directives. The major technical skill knowledge, skills and abilities for each course offering are outlined below. The Collision Repair and Refinishing Program incorporates the applied academic and workplace skills for each of the required collision repair, refinish and painting areas utilizing the I-CAR Live Curriculum . The I-CAR curriculum prepares students for careers and/or further education in collision repair and refinishing within the Transportation Technology Cluster. This CTE pathway program consists of the following courses: Paint and Refinishing, Non-Structural Analysis and Damage Repair, - Structural Analysis and Damage Repair, Mechanical and Electrical Components.

Students participating in the Collision Repair and Refinishing Program will be able to:

1. Develop workplace (employability) skills by demonstrating mastery of required academic and performance skills;
2. Demonstrate the ability to perform all tasks in a safe and expedient manner;
3. Demonstrate the ability to identify appropriate industry procedure/reference/estimation/training materials (both computerized and hardbound) to locate appropriate instructions and perform according to the stated guidelines;
4. Perform all diagnostic and repair tasks in accordance with manufacturer’s recommended procedures;
5. Perform all diagnostic and repair tasks within the prescribed times derived from the estimation software and/or flat rate manuals commonly used in the industry;
6. Demonstrate the ability to work individually and in teams to use - the I-CAR Live Curriculum and NATEF task list items requirements;
7. Acquire the necessary knowledge and skills to take the NA3SA End-of-Program Test for Painting and Refinishing, Non-Structural Analysis and Damage Repair\*, Structural Analysis and Damage Repair\* (B4), and Mechanical and Electrical Components, and
8. Perform an internship in an AutoBody Shop to complete challenging, industry standard tasks and projects. Students will be mentored by ASE Certified AutoBody Repair Professionals in an approved CTE Internship/Capstone Experience using the I-CAR curriculum and will be responsible for demonstrating mastery of required NATEF Task List items in the areas of Non-Structural Analysis; and Paint and Refinishing (and optional Structural Analysis & Damage Repair).

The High School will:

1. Maintain the program’s Collision Repair and Refinishing NATEF Certification status (If NATEFcertification is withdrawn or lapses, CTE program approval will be withdrawn);
2. Agree to require students to take the NA3SA End-of-Course Exams Non-Structural Analysis and Damage Repair,Paint and Refinishing, Structural Analysis and Damage Repair (optional), Mechanical and Electrical Components (optional) if certified in these programs and
3. Inform all students of the Statewide Articulation Agreements for Autobody/Collision Technology, between MSDE and the Pennsylvania College of Technology.

**STEP 2B: COURSE DESCRIPTIONS AND END OF COURSE ASSESSMENTS** – Insert each CTE completer course title. Describe each course based on what students are expected to know and be able to demonstrate as a result of their participation. Check the assessment instrument(s) that will be used to document student attainment of the knowledge and skills included in each course and specify additional information as appropriate.

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| **Course Title: Non-Structural Analysis and Damage Repair (2-3 Credits, NATEF recommended hours 375 w/ mig welding, 300 without)**Course Description: This course provides the student with the knowledge and skills necessary to pass the written NA3SA Collision Repair and Refinishing End-of Program Exam for Non-Structural Analysis & Damage Repair (B3) and immediately enter a career in this area and/or attend postsecondary education and/or training. Students develop diagnostic, technical and academic skills through classroom instruction and hands-on non-structural analysis and damage repair applications. Through theory and real-world experiences, students master the concepts and the ability to identify and perform necessary Non-Structural Analysis and Damage Repair tasks utilizing the latest techniques and applications. In addition, this course will address an introduction to welding; personal and environmental safety practices associated with clothing; respiratory protection, eye protection; entry level automotive service technology principles and practices; hand tools; power tools/equipment; proper ventilation; and the handling, storage, measuring and mixing procedures, raising and supporting vehicles, damage report principles and disposal of chemicals/materials in accordance with local, state, and federal safety and environmental regulations.Uses I-CAR Live Curriculum and NATEF Task List mastery for this area to formulate accurate estimates of cost of repairs.Upon sucessful completion of this course, students will be able to: • Analyze non-structural damage and identify and demonstrate proper preparation techniques;• Conduct body panel evaluation, estimation, diagnosis and perform repairs, replacements and adjustments, as necessary;• Perform metal finishing and body filling evaluation, estimation and diagnosis and perform necessary repairs;• Diagnose moveable glass and hardware damage, develop estimates and perform necessary repairs;• Perform metal welding and cutting tasks, as necessary, in conjunction with the above; • Analyze and identify types of plastic; diagnose repairability; • Identify and demonstrate proper procedures for plastics repair; • Determine replacement or repair of rigid, semi-rigid and flexible plastic panels according to manufacturer's /industry specifications;• Remove or repair damaged areas from rigid exterior sheet-molded compound (SMC) panels, as necessary; and• Analyze and replace bonded sheet-molded compound (SMC) body panels; straighten or align panel supports, as necessary.**End-of-Course Assessment**Check the assessment instruments that will be used to document student attainment of the course knowledge and skills.[x]  Teacher-designed end-of-course assessment[ ]  School system-designed end-of-course assessment[ ]  Partner-developed exam: (specify)      [ ]  Licensing exam: (specify)      [ ]  Certification or credentialing exam: (specify)      [x]  Nationally recognized examination: (specify) \* NA3SA Exam for Non-Structural Analysis & Damage Repair  |
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| **Course Title: Paint and Refinishing (3 Credits, NATEF recommended hours-300)** *(includes Workbased Learning if this is last course in sequence)*Course Description: This course provides the student with the knowledge and skills necessary to pass the written NATEF Painting and Refinishing NA3SA Exam for Paint and Refinishing and immediately enter a career in this area and/or attend postsecondary education and/or training. Utilizing the I-CAR Live Curriculum, students develop diagnostic, technical and academic skills through their participation in classroom instruction and hands-on applications in the areas of surface preparation; paint mixing, matching, application and paint equipment preparation; identification and correction of defects; final detailing and the ability to identify and perform other necessary Painting and Refinishing tasks. Upon sucessful completion of this course, students will be able to: • Analyze and determine required and locally established safety precautions for the work to be performed;• Evaluate of and determine appropriate procedure, tools and materials for proper surface preparation;• Operate spray gun, compressor, paint booth and related equipment preparation functions;• Analyze color requirements and perform the appropriate paint mixing, matching, and application techniques;• Identify paint defects, determine causes and cures, and estimate the cost of repair; and• Analyze and identify discrepancies and plan and execute all final detail related tasks. **End–of–Course Assessment**Check the assessment instruments that will be used to document student attainment of the course knowledge and skills.[x]  Teacher-designed end-of-course assessment[ ]  School system-designed end-of-course assessment[ ]  Partner-developed exam: (specify)      [ ]  Licensing exam: (specify)      [ ]  Certification or credentialing exam: (specify) [x]  Nationally recognized examination: (specify) \* \* NATEF NA3SA Painting and Refinishing Exam (Students are required to take the \* NATEF Painting and Refinishing NA3SA Exam).  |

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|  **Optional Course****Course Title: Structural Analysis and Damage Repair (3 High School Credits, NATEF recommended hours- 260 w/ mig welding, 185 without)** *(includes Work-based Learning if taken as last course in the sequence)*Course Description: This course provides the student with the knowledge and skills necessary to pass the written NATEF Structural Analysis and Damage Repair Exam Structural Analysis & Damage Repair and immediately enter a career in this area and/or attend postsecondary education and/or training. Students develop diagnostic, technical and academic skills through classroom instruction and hands-on structural analysis and damage repair applications. Through theory and real-world experiences, students master the concepts and the ability to identify and perform necessary Structural Analysis and Damage Repair tasks utilizing the latest techniques and applications. The course provides a theoretical study of structural collision damage, its analysis and repair. The course emphasizes the proper procedures for measuring; analyzing and developing correct repair procedures for unibody and body-over-frame vehicles. Student technicians develop repair plans and discuss their implementation. The course also emphasizes the restoring of vehicles to their pre-accident condition using manufacturers’ and industry recommendations. This course equips the student with the knowledge, skills and abilities necessary for immediate employment in the Transportation Equipment Pathway and/or continuing postsecondary education. Students utilize I-CAR Live Curriculum and NATEF Collision Repair Program Standards/Task List. Upon completion of this course the student will be able to:1. Comply with personal and environmental safety practices associated with clothing, eye protection, and use of chemicals, hand tools and power equipment;
2. Diagnose and measure structural damage using tram, centering and datum gauges according to industry specifications;
3. Attach frame-anchoring devices;
4. Identify repair procedures associated with straightening and aligning mash (collapse) damage;
5. Identify repair procedures associated with straightening and aligning sag damage;
6. Identify repair procedures for Removing and replacing damaged frame horns, side rails, cross members and front or rear sections;
7. Identify repair procedures associated with straightening and aligning sideway damage;
8. Identify repair procedures associated with straightening and aligning diamond frame damage;
9. Identify repair procedures associated with straightening and aligning twist damage;
10. Identify repair procedures associated with straightening and aligning cowl assembly;
11. Identify repair procedures associated with straightening and aligning roof rails (headers) and roof panels;
12. Identify repair procedures associated with straightening and aligning hinge and lock pillars;
13. Identify repair procedures associated with straightening and aligning body openings floor pans and rocker panels; and
14. Identify repair procedures associated with straightening and aligning quarter panels, wheelhouse assemblies and rear body sections (including rails, suspension and power train mounting points).

**End-of-Course Assessment**Check the assessment instruments that will be used to document student attainment of the course knowledge and skills.[x]  Teacher-designed end-of-course assessment[ ]  School system-designed end-of-course assessment[ ]  Partner-developed exam: (specify)      [ ]  Licensing exam: (specify)      [ ]  Certification or credentialing exam: (specify) [x]  Nationally recognized examination: (specify) \* \* NATEF Structural Analysis and Damage Repair NA3SA Exam. (Students are required to take the \* NATEF Structural Analysis and Damage Repair NA3SA Exam) . |
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STEP 2C: END-OF-PROGRAM ASSESSMENT - Check the assessment instruments that will be used to document student attainment of the program knowledge and skills. Include and identify assessments leading to industry recognized credentials if available and appropriate.

[ ]  Teacher-designed end-of-program assessment

[ ]  School system-designed end-of-program assessment

[ ]  Partner-developed exam: (specify) \_\_\_\_\_\_

[ ]  Licensing exam: (specify) \_\_\_\_\_\_

[ ]  Certification or credentialing exam: (specify) \_\_\_\_\_\_

[ ]  Nationally recognized examination: (specify) \_\_\_\_\_\_

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**Optional Course**

**Course Title: Mechanical and Electrical Components (NATEF recommended hours-240)**

Course Description: This course provides the student with the knowledge and skills necessary to pass the written NATEF Mechanical and Electrical Components End-of-Program Exam for Mechanical and Electrical Components and with this discipline and either Non-Structural Analysis and Damage Repair or Structural Analysis and Damage Repair may immediately enter a career in this area and/or attend postsecondary education and/or training. Utilizing the I-CAR Live Curriculum, students develop diagnostic, technical and academic skills through their participation in classroom instruction and hands-on applications in the areas of steering and suspension; electrical, brakes, heating and air condtioning; cooling systems; drive train; fuel intake and exhaust systems; restraint systems and the ability to identify and perform other necessary Mechanical and Electrical tasks.

Upon sucessful completion of this course, students will be able to:

• Analyze and determine required and locally established safety precautions for the work to be performed;

• Identify, evaluate and determine appropriate procedure, tools and materials for proper diagnosis and repair;

**End–of–Course Assessment**

Check the assessment instruments that will be used to document student attainment of the course knowledge and skills.

[x]  Teacher-designed end-of-course assessment

[ ]  School system-designed end-of-course assessment

[ ]  Partner-developed exam: (specify) \_\_\_\_\_\_\_

[ ]  Licensing exam: (specify) \_\_\_\_\_\_\_

[x]  Certification or credentialing exam: (specify)

[ ]  Nationally recognized examination: (specify) \* NATEF Mechanical and Electrical Components NA3SA Exam. (Students are required to take the \* NATEF Mechanical and Electrical Components NA3SA Exam.)

The NATEF/ASE Collision Repair Certification Standards provide guidelines for schools to tailor their program based on hours and areas taught. The school should be evaluated, and assessment tests should be taken, in the areas in which the schools are certified. They can be certified in Painting and Refinishing only, or they may be certified in Non-Structural Analysis and Damage Repair and one other discipline (will need to incorporate welding segment in the Non-Structural Analysis and Damage Repair if Structural Analysis and Damage Repair is not the second discipline), or they may be certified in Structural Analysis and Damage Repair and one other discipline (will need to incorporate welding segment in the Structural Analysis and Damage Repair if Non-Structural Analysis and Damage Repair is not the second discipline).

**STEP 2D: Program Sequence matrix (Include High School, Associate’s Degree, and Bachelor’s Degree programs)** Identify the pathway options. Complete the program matrix for the 9-12 program plus, for Tech Prep programs include the matrix for the two- or four-year college program of study. Indicate which courses receive CTE credit by placing the number of credits in parentheses after each CTE course title. Place an asterisk (\*) next to the course identified as the concentrator course indicating that the student has completed 50% of the program.

The program matrix defines a planned, sequential program of study that consists of a minimum of four credits in CTE coursework including work-based learning and/or industry-mentored projects. Work-based learning experiences or industry-mentored projects must be included in the program to obtain approval. The program matrix includes the recommended academic and CTE courses identified for the pathway and postsecondary linkages (i.e., dual enrollment, Tech Prep, transcripted and articulated credit).

CTE programs typically begin after ninth grade and do not include career exploration courses. Courses such as computer applications and keyboarding are not included in the completer sequence because they provide prerequisite skills for both academic courses and CTE programs. Academic courses are counted only if they are tailored to serve mainly CTE students and have been revised to reflect industry skill standards. Technology Education or Advanced Technology Education courses are not acceptable for credit in the career and technology education program sequence.

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| **The LSS program title should be the same one that appears on the cover page. If more than one pathway option is offered in the program, complete a matrix for each program option (MSDE will insert the CIP number). Example: An Academy of Information Technology program may include options in web design & programming.** |
| **Pathway/Program:** | **Autobody/ Collision & Repair Technology** | **CIP Number (For MSDE Use)** | **47.0635** |
| **Graduation Requirements** | **Grade 9** | **Grade 10** | **Grade 11** | **Grade 12** |
| English - 4 | English 9 | English 10 | English 11 | English 12 |
| Social Studies - 3 | US Government | World History | US History |  |
| Mathematics - 3  | Algebra 1 | Geometry | Algebra 2 | Trigonometry or Pre-Calculus |
| Science - 3 | Physical Science | Biology | Chemistry |  |
| Physical Education -.5Health Education - .5 | .5 PE | .5 Health |  |  |
| Fine Arts - 1 | .5 Fine Arts | .5 Fine Arts |  |  |
| Technology Education – 1 |  |  |  |  |
| CTE Completer Program – 5 \* Concentrator course\*\*Workplace Learning\*\*\* 5 College Credits if Dual Enrolled  |  | Nonstructural Analysis & Damage Repair, Plastics and Adhesives **(2-3)** | Painting and Refinishing \* ***\*\**** **(3)**( Note: Concentrator course is the second course in the sequence.) | ***(Optional)*** Structural Analysis and Damage Repair ***\*\**** \*\*\* **(3)** |
| Foreign Language - 2 and/orAdvanced Tech Ed - 2 | Language Spanish 1 | Language Spanish 2 |  |  |
| **Provide a list of examples of careers students are preparing to enter and postsecondary options:** Collision Repair Technician, Automobile Insurance Estimator |

STEP 2E: VALUE-ADDED OPTIONS – Fill in the name of the partnering college or agency. Specify the credential that students will earn. Under value-added, indicate the number of credits or hours granted. This information is required before a program can be designated as a CTE articulated program of study.

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| --- | --- | --- | --- |
| **Option** | **Partner** | **Credential** | **Value added for CTE completers** |
| Dual Enrollment/Tran scripted Credit |  |  |  |
| Articulated Credit | Pennsylvania College of Technology | Collision Repair Technology AAS Degree,Collision Repair Technician Two-Year Certificate, orAutomotive Technology Management BS Degree. | 10 -16 Credit Semester Hrs for meeting all program requirement and passing NATEF NA3SA Exams |
| Credit by Exam |  |  |  |
| Advanced Placement |  |  |  |
| Apprenticeship Approved by MATC\*\* |  |  |  |
| Certification(s) |  |  |  |
| License |  |  |  |
| Degree |  |  |  |
| Other (specify) |  |  |  |

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| **Two Year College Program Sequence – Program Overview****Many local school systems provide postsecondary matrices in their program of study guides to inform students, parents, and counselors of the opportunities available to those enrolled in the program. Section 2E must be completed before n articulated CTE program of study can be approved.  *A copy of the Articulation Agreement is required to be submitted with the proposal prior to program approval. (Pennsylvania College of Technology Articulation Agreement at Attachment 1)*****Describe the program to be developed in detail based on what students are expected to know and be able to demonstrate as a result of participating in the program.** |
| **Program Title: Associate of Applied Science College/Institution: Pennsylvania College of Technology*** Pennsylvania College of Technology offers a Collision Repair Technology AAS degree – 71 credit hours required. Upon completion of this degree, students may transfer these credits to Penn College’s Automotive Technology Management BS Degree Program, or enter the job market as well-prepared, high-level collision repair technicians or entrepreneurs.
* Up to 16 semester hours of articulated credit is awarded to high school students, at the Pennsylvania College of Technology, who:
* Complete the entire Autobody/Collision Repair Technician Program of Study;
* sit for and pass the NA3SA end of course assessments: Non-Structural Analysis and Damage Repair, Paint and Refinishing, Structural Analysis and Damage Repair (optional), and Mechanical and Electrical Components (optional).
* Provide a copy of their official NATEF/NA3SA student certification to Penn College prior to July 1 of the academic year;
* Receive a Maryland high school diploma;
* Meet the Admission dates, procedures that apply to all new students at the Pennsylvania College of Technology, and current college policies on Adanced Credit; and
* Apply to Penn College within three years of high school graduation**.**
 |
| **Recommended Sequence – Complete the program matrix for the postsecondary sequence for the Tech Prep program of study. Indicate which courses receive articulated or transcripted credit by PLACING THE NUMBER OF CREDITS IN PARENTHESES after each course title.**  |
| **Semester 1** | **Semester 2** |
| ABC 100 Intro to Non-Structural Collision Repair **(2)** ABC 104 Introduction to Non-Structural Collision Repair Applications **(3)** ABC 110 Collision Estimating 3MTH 124 Technical Algebra and Trigonometry I 3OrMTH 180 College Algebra and Trigonometry I 3SAF 110 Occupational Health and Safety 2WEL 105 Collision Repair Welding 3 FIT Fitness and Lifetime Sports Elective 1 | AMT 104 Hybrid Electric Vehicle 1ABC 115 Fundamentals of Electrical/Electronic and Air Conditioning **2\***ABC 116 Fundamentals of Electrical/Electronic and Air Conditioning Applications **1\***ABC 125 Basic Refinishing **(2)**ABC 129 Basic Refinishing Applications **(3)**ABC 127 Chassis Alignment, Steering and Suspension Principles **2\***ABC 128 Chassis Alignment, Steering and Suspension Application **1\***CSC 124 Information, Technology and Society 3ENL 111 English Composition I 3 |
| **Semester 3** | **Semester 4** |
| ABC 209 Collision-Related Mechanical Principals 2ABC 210 Collision-Related Mechanical Applications 2ABC 228 Repair Procedures Fundamentals 5ABC 229 Repair Procedures Applications 3ENL 121 English Composition II 3OrENL 201 Technical and Professional Comm. 3MGT 249 Small Business Management 3SCI Science Elective 3*The* ***10*** *semester**hours of**credit in* ***( )*** *indicate articulated credit for meeting all of the requirements listed above. The* ***6*** *asterisked credits indicate articulated credit for meeting all of the requirements of the optional Mechanical and Electrical course. The* ***5*** *credits with the adjoining number sign (#), indicate articulated credit for meeting all the requirments of the Structrual Analysis and Damage Repair Course.* | ABC 207 Structural Repair Procedures **2#** ABC 208 Structural Repair Laboratory **3#**ABC 226 Advanced Refinishing Theory 2ABC 227 Advanced Refinishing Lab 4ABC 345 Collision Repair Operations 3HUM Humanities Elective, OR 3 SSE Social Science Elective, OR 3ART Art Elective, OR 3FOR Foreign Language Elective, OR 3AAE Applied Arts Elective, OR 3IFE international Field Experience Elective 3 |
| **Provide a list of examples of careers students are preparing to enter:** **Provide a list of examples of careers students are preparing to enter:** Collision Repair Lead Technician, Collision Repair Technician, Collision Repair Team Leader, Collision Repair Estimator, Collision Repair Insurance Adjuster, Collision Repair Quality Technician, Collision Repair Quality Engineer, Automotive Refinishing Technician |

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| --- |
| **Four Year College Program Sequence – Program Overview****Complete this matrix if the program includes a four-year degree option.****Many local school systems provide postsecondary matrices in their program of study guides to inform students, parents, and counselors of the opportunities available to those enrolled in the program. Section 2E must be completed before an articulated CTE program of study can be approved.** **Describe the program to be developed in detail based on what students are expected to know and be able to demonstrate as a result of participating in the program.** |
| **Program Title: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_****College/Institution: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** |
| **Recommended Sequence – Complete the program matrix for the postsecondary sequence for the Tech Prep program of study. Indicate which courses receive articulated or transcripted credit by PLACING THE NUMBER OF CREDITS IN PARENTHESES after each course title.**  |
| **Semester 1** | **Semester 2** |
| **(See Attachment 2)** |  |
| **Semester 3** | **Semester 4** |
|  |  |
| **Provide a list of examples of careers students are preparing to enter with a four-year degree:**  |

**STEP 2F: INDUSTRY-MENTORED PROJECT OR WORK-BASED LEARNING OPPORTUNITIES PROVIDED**

Check each box that applies.

PAC members and other industry partners provide supervised (WBL) experiences and/or industry-mentored projects for all students who demonstrate performance of the competencies necessary to enter into this phase of the program. Supervised work-based learning experiences are required for all students demonstrating readiness to participate. For the few who do not participate, alternative capstone experiences should be provided (i.e., in school work experiences, a culminating project, or another experience comparable in rigor). Each type of work-based learning is defined in the glossary. Job shadowing is **not** acceptable for credit in a CTE program.

1. [ ]  Integrated WBL 2. [x]  Capstone WBL 3. [ ]  Registered Apprenticeship
4. [ ]  Internship 5. [ ]  Industry-Mentored Project 6. [ ]  In-school clinic or school-based enterprise

**STEP 2G: STUDENT ORGANIZATIONS PROVIDED TO STUDENTS IN THE PROGRAM**

Check each box that applies or specify if “Other” is selected.

Students will develop and apply technical and academic skills, as well as Skills for Success, through participation in:

[ ]  DECA [ ]  FFA [x]  SkillsUSA [ ]  FBLA [ ]  HOSA

[ ]  OTHER (specify)

STEP 3: COMPLETE THE INSTRUCTIONAL PROGRAM DATA SHEET

|  |  |
| --- | --- |
| Local School System (LSS) and Code: |  |
| Name of Local Director of CTE: |  | Phone: |  |
| LSS Program Title: | **Collision Repair and Refinishing** | CIP Code: | **41.0635** |

*STEP 3.1 – DATA SHEET: PATHWAY OPTIONS*

|  |  |
| --- | --- |
| **1.** | **Collision Repair and Refinishing**  |
| **2.** |  |
| **3.** |  |
| **4.** |  |

*STEP 3.2 – DATA SHEET: INSTRUCTIONAL PROGRAM CREDIT BY GRADE(S)*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Credits per year per pathway option as reflected by Course Sequences** | **9** | **10** | **11** | **12** | **TOTAL** |
| **1. Collision Repair and Refinishing** |  | **2-3** | **3** | **\*3 (optional)** | **5 to 9** |
|  |  |  |  |  |  |
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**Total number of credits for program completion: 5-6 (depending on the number of credits awarded)**

**\*Work-based learning included.**

*STEP 3.3 – DATA SHEET: CAREER AND TECHNOLOGY EDUCATION PROGRAM SITES*

|  |  |  |
| --- | --- | --- |
| **Pathway Options** | **School Name(s) Sites** | **School Number** |
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| MSDElogo | **Lillian M. Lowery, Ed. D.****State Superintendent of Schools** |
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**STATEWIDE ARTICULATION AGREEMENT**

**BETWEEN**

**PENNSYLVANIA COLLEGE OF TECHNOLOGY**

**AND THE**

**MARYLAND STATE DEPARTMENT OF EDUCATION**

**ON BEHALF OF LOCAL SCHOOL SYSTEMS**

*This articulation agreement can be used for students enrolling in the following programs:* Collision Repair Technology *AAS Degree, Collision Repair Technician Two-Year Certificate, or Automotive Technology Management BS Degree at Pennsylvania College of Technology (Penn College).*

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Maryland State Department of Education (MSDE) and Pennsylvania College of Technology (Penn College) enter into this articulation agreement in order to facilitate the enrollment of students from the Maryland Career and Technology Education (CTE) Program of Study in **Autobody/Collision Repair Technician/**National Automotive Technicians Education Foundation (NATEF), CIP 47.0635 into Penn College. Both parties agree to annually review the document and update as appropriate.

Subject to terms of this agreement, a student who successfully completes the approved Maryland CTE Program of Study in Autobody/Collision Repair Technician/NATEF, CIP 47.0635: Non-Structural Analysis and Damage Repair (2-3 credits),Paint and Refinishing (3 credits), Structural Analysis and Damage Repair (3 credits) optional, Mechanical and Electrical Components (2 credits) optional will be granted advanced credit at Penn College for the following courses:

* ABC 100 introduction to Non-Structural Collision Repair 2 credits
* ABC 104 Introduction to Non-Structural Collision Repair

 Applications 3 credits

* ABC 115 Fundamentals of Electrical/Electronic & Air Conditioning 2 credits\*
* ABC 116 Electrical/Electronics & Air conditioning 1 credit\*
* ABC 127 Chassis Alignment, Steering & Suspension Principles 2 credits\*
* ABC 128 Chassis Alignment, Steering & Suspension Application 1 credit\*
* ABC 125 Basic Refinishing 2 credits
* ABC 129 Basic Refinishing Application 3 credits
* ABC 207 Structural Repair Procedures 2 credits\*
* ABC 208 Structural Repair Procedures Laboratory 3 credits\*

**Note:** All programs eligible to participate in the articulation agreement must be currently NATEF certified and use the I-CAR Curriculum**.**

\*Optional Credits