



Nancy S. Grasmick  
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:  
Autobody/Collision Technician Associate Degree, Two-Year General Certificate, or Bachelor of Arts 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*

**Total Credits**

**21 credits**

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

\*Optional Credits

**The terms of this agreement are as follows:**

**Maryland Local Schools Systems will:**

- Offer the Maryland Career and Technology Education (CTE) Program of Study in Autobody /Collision Repair Technician/NATEF, CIP 47.0635 as stated in the Maryland CTE program proposal, as attached; and
- Communicate details of this agreement to principals, teaching staff, guidance personnel, students and parents/guardians.

**Full or partial articulated credit will be awarded based on the following when students:**

- Complete the entire Autobody/Collision Repair Technician/NATEF Program of Study, CIP 47.0635 by taking all required courses: Non-Structural Analysis and Damage Repair, Paint and Refinishing, Structural Analysis and Damage Repair (optional), Mechanical and Electrical Components (optional);
- Sit for and pass the National Automotive Student Skills Standards Assessment (NA3SA) end-of-course assessments; Non-Structural Analysis and Damage Repair, Paint and Refinishing, Structural Analysis and Damage Repair (optional), Mechanical and Electrical Components (optional). Articulation credit will only be awarded for the exams passed;
- 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 Advanced Credit; and
- Apply to Penn College within three years of high school graduation.

**Pennsylvania College of Technology will:**

- Arrange meetings, as requested, with faculty and students on the Maryland NATEF Program school campuses to provide information and assistance in matriculating at Penn College;
- Supply MSDE and local school systems with promotional literature that will be used to assist students with the application and/or transfer process;
- Communicate details of this agreement to staff in admissions, academic affairs, and faculty;
- Award the appropriate number of academic and/or technical credits, as specified in this agreement, upon review of the student's transcript and completion of the application process;
- Notify student of credits awarded;
- Provide a list of student credits awarded to MSDE each spring; and
- Notify student's teacher and copy the CTE Director, based upon student's self-identification, to verify the program is NATEF certified and request recommendation.

**Maryland State Department of Education will:**

- Communicate details of this agreement with local school systems via CTE Directors;
- Confirm programs participating in the articulation agreement are currently NATEF certified;
- Provide Penn College with a list of centers (and their feeder schools) offering approved Maryland CTE Programs of Study in Autobody /Collision Repair Technician/NATEF, CIP 47.0635 annually; and
- Provide Penn College with a list of CTE Directors annually.

**ARTICULATION AGREEMENT  
PENNSYLVANIA COLLEGE OF TECHNOLOGY  
AND THE  
MARYLAND STATE DEPARTMENT OF EDUCATION  
ON BEHALF OF LOCAL SCHOOL SYSTEMS  
AUTOBODY/COLLISION REPAIR TECHNICIAN**

The undersigned agree to uphold all requirements of this agreement, including an annual review with appropriate updates. For just cause, either party can terminate the agreement given ninety days written notice. If the agreement is terminated, all student credits previously awarded will remain unaffected.

*For Maryland State Department of Education:*

*For Pennsylvania College of Technology:*



\_\_\_\_\_  
Katherine M. Oliver,  
Assistant State Superintendent of Schools  
Division of Career Technology and  
Adult Learning  
Maryland State Department of Education



\_\_\_\_\_  
David Jane Gilmour, Ph.D.  
President

8/5/2009  
\_\_\_\_\_  
Date

8/27/09  
\_\_\_\_\_  
Date



\_\_\_\_\_  
Colin W. Williamson, Dean  
School of Transportation Technology

8/6/2009  
\_\_\_\_\_  
Date

APPROVED AS TO FORM AND LEGAL  
SUFFICIENCY



\_\_\_\_\_  
Assistant Attorney General  
Maryland State Department of Education  
Date

**Program Articulation for the Career and Technology Education**  
**Autobody/Collision Repair Technician Program**  
**The Maryland State Department of Education**  
**Pennsylvania College of Technology**

The purpose of this document is to outline responsibilities for ensuring that students earn college credit for the Autobody/Collision Repair Technician/National Automotive Technicians Education Foundation (NATEF) Program of Study that meets requirements specified in the articulation agreement between Maryland Local School Systems (LSS) and Pennsylvania College of Technology (Penn College). Representatives from the Maryland State Department of Education (MSDE), Penn College, local school systems and Autobody/Collision Repair Technician students share responsibilities.

**Maryland Local School Systems will:**

- Offer the Maryland Career and Technology Education (CTE) Program of Study in Autobody/Collision Repair Technician/NATEF, CIP 47.0635 as stated in the Maryland CTE program proposal; and
- Communicate details of this agreement to principals, teaching staff, guidance personnel, students and parents/guardians.

**Students will:**

**Note: Full or partial articulated credit will be awarded based on the following**

- Complete the entire Autobody /Collision Repair Technician/NATEF Program of Study, CIP 47.0635 by taking all required courses: Non-Structural Analysis and Damage Repair, Paint and Refinishing, Structural Analysis and Damage Repair (optional) or Mechanical and Electrical Components (optional);
- Sit for and pass the National Automotive Student Skills Standards Assessment (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). Articulation credit will only be awarded for the exams passed;
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## Autobody/Collision Program Articulated Credit Map

High School Program of Study				
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	

Pennsylvania College of Technology Autobody/Collision Technician Associates Degree & BS	
<b>Freshman Year:</b>	
<i>First Semester</i>	
ABC100 Introduction to Non-Structural Collision Repair	2
ABC104 Introduction to Non-Structural Collision Repair Applications	3
ABC110 Collision Estimating	3
MTH124 Technical Algebra and Trigonometry I	3
or	
MTH180 College Algebra and Trigonometry I	3
SAF110 Occupational Health and Safety	2
WEL105 Collision Repair Welding	3
FIT Fitness and Lifetime Sports Elective	1
Total Credits	17
<i>Second Semester</i>	
AMT104 Hybrid Electric Vehicle	1
ABC115 Fundamentals of Electrical/Electronic and Air Conditioning	2
ABC116 Electrical/Electronic and Air Conditioning Applications	1
ABC125 Basic Refinishing	2
ABC129 Basic Refinishing Applications	3
ABC127 Chassis Alignment, Steering and Suspension Principles	2
ABC128 Chassis Alignment, Steering and Suspension Application	1
CSC124 Information, Technology, and Society	3
ENL111 English Composition I	3
Total Credits	18

Mathematics – 4	Algebra 1	Geometry	Algebra 2	Trigonometry or Pre-Calculus	<b>Sophomore Year:</b> <i>Third Semester</i> ABC209 Collision-Related Mechanical Principles 2 ABC210 Collision-Related Mechanical Application 2 ABC228 Repair Procedures Fundamentals 2 ABC229 Repair Procedures Applications 3 ENL121 English Composition II 3 or ENL201 Technical and Professional Communication 3 MGT249 Small Business Management 3 SCI Science Elective 3 Total Credits 18  <i>Fourth Semester</i> ABC207 Structural Repair Procedures 2 ABC208 Structural Repair Procedures Laboratory 4 ABC226 Advanced Refinishing Theory 2 ABC227 Advanced Refinishing Laboratory 4 ABC345 Collision Repair Operations 3 HUM Humanities Elective 3 or SSE Social Science Elective 3 or ART Art Elective 3 or FOR Foreign Language Elective 3 or AAE Applied Arts Elective 3 or IFE International Field Experience Elective 3 Total Credits 18
Science – 3	Physical Science	Biology	Chemistry		<b>Junior Year:</b> <i>Fifth Semester</i> ABM310 Automotive Management and Customer Service 3 ACC113 Introduction to Financial Accounting 3 ECO111 Principles of Macroeconomics 3 MGT115 Principles of Management 3 CHM100 Fundamentals of Chemistry 4 or MSC106 Introduction to Metallurgy 4 SAF110 Occupational Health and Safety 2 Total Credits 18  <i>Sixth Semester</i> ABM350 Automotive Management Strategic Planning and Personnel 3 ABM355 Advanced Topics in Automotive Technology 3
Physical Education - .5 Health Education - .5	.5 PE	.5 Health			
Fine Arts – 1	.5 Fine Arts	.5 Fine Arts			
Technology Education – 1	Foundations of Technology				





## **Autobody/Collision Repair Technician Course Descriptions**

### **Program Description**

The Autobody/Collision Repair Technician is a Maryland CTE Program of Study. 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 Autobody/Collision Repair Technician Program of Study incorporates the applied academic and workplace skills for each of the required collision repair, refinishing 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: Non-Structural Analysis and Damage Repair, Paint and Refinishing, Structural Analysis and Damage Repair (optional), and Mechanical and Electrical Components (optional).

### **Secondary Courses**

#### **Non-Structural Analysis and Damage Repair (2-3 Credits)**

**Course Description:** This course provides the student with the knowledge and skills necessary to pass the written NA3SA Non-Structural Analysis & Damage Repair end-of-program assessment 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. Students utilize I-CAR Live Curriculum and NATEF Collision Repair Program Standards/Task List.

#### **Paint and Refinishing (3 Credits)**

**Course Description:** This course provides the student with the knowledge and skills necessary to pass the written NA3SA Paint and Refinishing end-of-course assessment 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.

**Optional course:**

**Structural Analysis and Damage Repair (3 Credits)**

**Course Description:** This course provides the student with the knowledge and skills necessary to pass the written NA3SA Structural Analysis and Damage Repair end-of-course assessment and immediately enter a career in this area and/or attend postsecondary education. 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. Students utilize I-CAR Live Curriculum and NATEF Collision Repair Program Standards/Task List.

**Optional course:**

**Mechanical and Electrical Components (2 Credits)**

**Course Description:** This course provides the student with the knowledge and skills necessary to pass the written NA3SA Mechanical and Electrical Components end-of-course assessment and immediately enter a career in this area and/or attend postsecondary education. Utilizing the I-CAR Live Curriculum, students develop diagnostic, technical and academic and the ability to identify and perform necessary mechanical and electrical tasks.

**Articulation Agreement Signature Page Between  
Maryland State Department of Education on  
Behalf of Local School Systems and  
Penn College**

<b>MSDE Autobody/Collision Program</b>	
<b>Course Title</b>	<b>Credits</b>
Non-Structural Analysis and Damage Repair	2-3
Paint and Refinishing	3

<b>Penn College Program Title</b>		
<b>Course No.</b>	<b>Course Title</b>	<b>Credit Awarded</b>
ABC-100	Introduction to Non-Structural Collision Repair	2
ABC-104	Introduction to Non-Structural Collision Repair Applications	3
ABC-125	Basic Refinishing	2
ABC-129	Basic Refinishing Applications	3

or

<b>MSDE Autobody/Collision Program</b>	
<b>Course Title</b>	<b>Credits</b>
Structural Analysis and Damage Repair	3
Mechanical and Electrical Components	2

<b>Penn College Program Title</b>		
<b>Course No.</b>	<b>Course Title</b>	<b>Credit Awarded</b>
ABC-207	Structural Repair Procedures	2
ABC-208	Structural Repair Procedures Laboratory	3
ABC-115	Fundamentals of Electrical /Electronic and Air Conditioning	2
ABC-116	Electrical/Electronic and Air Conditioning Applications	3
ABC-127	Chassis Alignment, Steering and Suspension Principles	2
ABC-128	Chassis Alignment, Steering and Suspension Applications	3



**Katharine M. Oliver**

Assistant State Superintendent of Schools  
Division of Career Technology and Adult Learning  
Maryland State Department of Education



**Davie Jane Gilmour, Ph.D.**

President  
Pennsylvania College of Technology

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