



Nancy S. Grasmick
State Superintendent of Schools

200 West Baltimore Street • Baltimore, MD 21201 • 410-767-0100 • 410-333-6442 TTY/TDD • MarylandPublicSchools.org

**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: Automotive 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 **Automotive Technology**/National Automotive Technicians Education Foundation (NATEF), CIP 47.0645 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 Automotive Technology/NATEF, CIP 47.0645: Electrical/Electronic Systems (2 credits), Brakes (1 credit), Suspension and Steering (1 credit), Engine Performance (1 credit) will be granted advanced credit at Penn College for the following courses:

•	AMT 109	Automotive Electrical Fundamentals	3 credits
•	AMT 112	Brake Systems	3 credits
•	AMT 113	Steering and Suspension	3 credits
•	AMT 121	Automotive Fuel and Emission Control Systems	2 credits
•	AMT 126	Engine Electrical Systems	4 credits
Total Credits			15 credits

Note: All programs eligible to participate in the Articulation Agreement must be currently NATEF certified.

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 Automotive Technology/NATEF, CIP 47.0645, 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 and/or guardians.

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

- Complete the entire Maryland CTE Automotive Technology/NATEF Program of Study by taking all required courses: Electrical/Electronic Systems, Brakes, Suspension and Steering, and Engine Performance;
- Sit for and pass the National Automotive Student Skills Standards Assessment (NA3SA) end-of-course exams; (Electrical/Electronic Systems, Brakes, Suspension and Steering, and Engine Performance). 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 Automotive Technology/NATEF, CIP 47.0645 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
AUTOMOTIVE TECHNOLOGY**

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



Davie Jane Gilmour, Ph.D.
President

8/5/2009

Date

8/27/09

Date

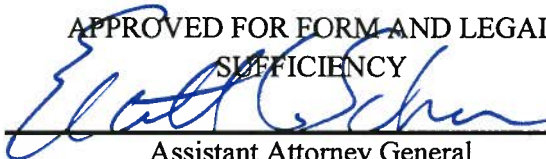


Colin W. Williamson, Dean
School of Transportation Technology

8/6/2009

Date

APPROVED FOR FORM AND LEGAL
SUFFICIENCY



Assistant Attorney General
Maryland State Department of Education
Date

Program Articulation for the Career and Technology Education
Automotive Technician Program
The Maryland State Department of Education
Pennsylvania College of Technology (Penn College)

The purpose of this document is to outline responsibilities for ensuring that students earn college credit for the Automotive Technology/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 transportation technology students share responsibilities.

Maryland Local School Systems will:

- Offer the Maryland Career and Technology Education (CTE) Program of Study in Automotive Technology/ NATEF, CIP 47.0645, as stated in the Maryland CTE program proposal; and
- Communicate details of this agreement to principals, teaching staff, guidance personnel, students and parents and/or guardians.

Students will:

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

- Complete the entire Maryland CTE Automotive Technology/NATEF Program of Study by taking all required courses: Electrical/Electronic Systems, Brakes, Suspension and Steering, and Engine Performance;
- Sit for and pass the National Automotive Student Skills Standards Assessment (NA3SA) end-of-course assessments; (Electrical/Electronic Systems, Brakes, Suspension and Steering, and Engine Performance). 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 an updated list of student credits earned 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 Automotive Technology/NATEF, CIP 47.0645 annually; and
- Provide Penn College with a list of CTE Directors annually.

Automotive Technology 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	
Mathematics – 4	Algebra 1	Geometry	Algebra 2	
Science – 3	Physical Science	Biology	Chemistry	

Pennsylvania College of Technology Automotive Associate Degree or Bachelor of Science	
Freshman Year:	Credits
First Semester	
AMT111 Manual Transmission and Transaxle Principles	3
AMT112 Brake Systems	3
AMT113 Steering and Suspension	3
AMT119 Fundamentals of Automatic Transmissions	3
AMT242 Vehicle Safety Inspection	1
MTH124 Technical Algebra and Trigonometry I	3
or	
MTH180 College Algebra and Trigonometry I	3
FIT Fitness and Lifetime Sports Elective	1
Total Credits	17
Second Semester	Credits
AMT109 Automotive Electrical Fundamentals	3
AMT121 Automotive Fuel and Emission Control Systems	2
AMT122 Engine Principles	3
AMT126 Engine Electrical Systems	4
CSC124 Information, Technology, and Society	3
ENL111 English Composition I	3
Total Credits	18
Sophomore Year:	Credits
Third Semester	
AMT104 Hybrid Electric Vehicle	1
AMT236 Engine Performance	4
AMT266 Engine Repair	4
AMT264 Powertrain Electronics	3
ENL201 Technical and Professional Communication	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

<p>Fourth Semester AMT243 Automotive Chassis and Wheel Service 6 AMT274 Automotive Air Conditioning Systems & Service 3 AMT276 Electrical/Electronic Accessory Service 4 PHS103 Physics Survey 3 or PHS114 Physics with Technological Applications 4 Total Credits 16</p>				<p>Fourth Semester Credits</p>
<p>Junior Year: Fifth Semester 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</p>				<p>Junior Year Credits</p>
<p>Sixth Semester ABM350 Automotive Management Strategic Planning and Personnel 3 ABM355 Advanced Topics in Automotive Technology 3 MGT330 Managerial Decision Making 3 or MGT301 Business Law I 3 MTH160 Elementary Statistics with Computer Applications 4 SPC101 Fundamentals of Speech 3 or SPC201 Interpersonal Communication 3 Total Credits 16</p>				<p>Sixth Semester Credits</p>
<p>Senior Year: Seventh Semester ABM450 Automotive Managerial Analysis 3 ABM455 Automotive Technical Training & Workforce Development 3 MGT249 Small Business Management 3 or MGT248 Supervision and Human Relations 3 HRM300 Human Resource Management 3 OEA Open Elective 3 HUM Humanities Elective 3 or SSE Social Science Elective 3 or</p>				<p>Senior Year Credits</p>
<p>Physical Education - .5 Health Education - .5</p>	<p>.5 PE .5 Health</p>	<p>.5 Fine Arts .5 Health</p>		
<p>Fine Arts – 1</p>	<p>Foundations of Technology</p>	<p>Suspension and Steering (1) Brakes (1)</p>	<p>*Electronic/Electrical Systems (2) Engine Performance (1) (**WBL)</p>	
<p>CTE Completer Program – 5 * Concentrator course ** Work Base Learning</p>	<p>Foreign Language I</p>	<p>Foreign Language II or →</p>	<p>Advanced Technology Education</p>	
<p>Foreign Language – 2 and/or Advanced Tech Ed – 2</p>	<p>Foreign Language I</p>	<p>Foreign Language II or →</p>	<p>Advanced Technology Education</p>	

					ART Art Elective or Foreign Language Elective	3
					FOR or Applied Arts Elective	3
					AAE or International Field Experience Elective	3
					IFE Total Credits	3 18
					Eighth Semester	Credits
					ABM495 Senior Project	3
					PHL210 Ethics	3
					ART Art Elective	3
					FIT Fitness and Lifetime Sports Elective	1
					OEA Open Elective	3
					HSC Humanities/Social Science Cultural Diversity Elective	3
					Total Credits	16

Maryland State Department of Education
Program of Study
Automotive Technology Course Descriptions

Program Description

The Automotive Technician Maryland CTE Program of Study is an instructional program that incorporates the Automotive Service Excellence (ASE) program certification standards and the National Automotive Technicians Education Foundation (NATEF) task lists. The program prepares students for further education and careers in the Transportation Technology Pathway. The program consists of four courses: Suspension and Steering (A-4), Brakes (A-5), Electrical/Electronic Systems (A-6), and Engine Performance (A-8).

Secondary Courses

Suspension and Steering (A-4) (1 Credit)

Course Description: This course provides the student with the knowledge and skills necessary to pass the NA3SA Steering and Suspension end-of-course assessment and immediately enter a career in this area and/or attend postsecondary education and/or training. Students develop diagnostic, technical, problem-solving and academic skills through classroom instruction and hands-on maintenance applications. Through theory and real-world experiences students master the concepts and the ability to research applicable vehicle and service information, collect and analyze relevant data, troubleshoot, identify, formulate proposed solutions to problems and perform necessary automobile suspension and steering repair tasks. Students will use state-of-the-art precision steering and alignment measurement tools and equipment to gather, analyze and make necessary repairs.

Brakes (A-5) (1 Credit)

Course Description: This course provides the student with the knowledge and skills necessary to pass the NA3SA Brakes end-of-course assessment and immediately enter a career in this area and/or attend postsecondary education and/or training. Students develop diagnostic, technical problem-solving and academic skills through classroom instruction and hands-on maintenance applications. Through theory and real-world experiences, students master the concepts and the ability to research applicable vehicle and service information, collect and analyze relevant data, troubleshoot, identify, formulate proposed solutions to problems and perform necessary automobile brake diagnosis and repair tasks. Students will use state-of-the-art precision brake measurement tools and equipment to gather, analyze make necessary NATEF required brake repairs tasks

Electrical/Electronic Systems (A-6) (2 Credits)

Course Description: This course provides the student with the knowledge and skills necessary to pass the NA3SA Electrical/Electronic Systems end-of-course assessment for and immediately enter a career in this area and/or attend postsecondary education and/or training. Students

develop diagnostic, technical problem-solving and academic skills through classroom instruction and hands-on maintenance applications. Through theory and real-world experiences, students master the concepts and the ability to research applicable vehicle and service information, collect and analyze relevant data, troubleshoot, identify, formulate proposed solutions to problems and perform necessary automobile electrical and electronic systems repair tasks. Students will use state-of-the-art precision electronic measurement tools, fault code readers and equipment to gather, analyze make necessary NATEF required electrical and electronic system repairs.

Engine Performance (A-8) (1 Credit)

Course Description: This course provides the student with the knowledge and skills necessary to pass the NA3SA Engine Performance end-of-course assessment and immediately enter a career in this area and/or attend postsecondary education and/or training. Students develop diagnostic, technical problem-solving and academic skills through classroom instruction and hands-on maintenance applications. Through theory and real-world experiences, students master the concepts and the ability to research applicable vehicle and service information, collect and analyze relevant data, troubleshoot, identify, formulate proposed solutions to problems and perform necessary automobile engine performance troubleshooting and repair tasks. Students will use state-of-the-art precision engine performance measurement tools, fault code readers and equipment to gather, analyze make necessary NATEF required engine performance repairs.

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

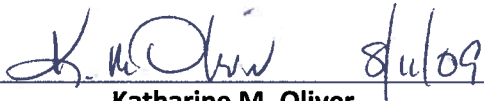
MSDE Transportation Technology Program	
Course Title	Credits
Suspension and Steering	1
Brakes	1

Penn College Program Title		
Course No.	Course Title	Credit Awarded
AMT-113	Steering Suspension	3
AMT-112	Brake Systems	3

or

MSDE Transportation Technology Program	
Course Title	Credits
Electrical/Electronic Systems	2
Engine Performance	1

Penn College Program Title		
Course No.	Course Title	Credit Awarded
AMT-109	Automotive Electrical Fundamentals	3
AMT-126	Engine Electrical Systems	4
AMT-121	Automotive Fuel and Emission Control Systems	2



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