

**CAREER CLUSTER™: TRANSPORTATION, DISTRIBUTION AND LOGISTICS
 NM Job Council's 13 Economic Sectors Alignment: Visitor Driven Industry**

Pathways and related Programs of Study in this career cluster address careers in planning, management, and movement of people, materials, and goods by road, pipeline, air, rail and water and related professional support services such as transportation infrastructure planning and management, logistics services, mobile equipment and facility maintenance.

The Pathways for this Career Cluster™ are:

- Facility and Mobile Equipment
- Health, Safety and Environmental
- Logistics Planning and Management
- Sales and Service
- Transportation Operations
- Transportation Systems/Infrastructure Planning, Management and Regulation
- Warehousing and Distribution

| Program Learning Outcomes from the NASDCTE Common Career Technical Core: | |
|--|---|
| <i>Note: it is expected that a student completing any Program of Studies in this Career Cluster would transition to post secondary college and career being able to know and do each of these Standards, unless otherwise noted.</i> | |
| 1. | Describe the nature and scope of the Transportation, Distribution and Logistics Career Cluster and the role of transportation, distribution and logistics in society and the economy. |
| 2. | Describe the application and use of new and emerging advanced techniques to provide solutions for transportation, distribution and logistics problems. |
| 3. | Describe the key operational activities required of successful transportation, distribution and logistics facilities. |
| 4. | Identify governmental policies and procedures for transportation, distribution and logistics facilities. |
| 5. | Describe transportation, distribution and logistics employee rights and responsibilities and employer's obligations concerning occupational safety and health. |
| 6. | Describe career opportunities and means to achieve those opportunities in each of the Transportation, Distribution and Logistics Career Pathways. |

THE CERTIFICATIONS LISTED BELOW ARISE FROM INTERVIEWS, WEBINARS, AND FOCUS GROUPS WITH SECONDARY AND POST SECONDARY EDUCATORS AS WELL AS INPUT FROM INDUSTRY PARTNERS AND REPRESENTATIVES. THE NEXT STEP FOR VALIDATION IS LABOR MARKET DATA AND THE ECONOMIC NEEDS OF BOTH THE STATE OF NEW MEXICO AND THE REGIONS.

| Workforce Certification: |
|---|
| Automotive Service Excellence (ASE) Certifications: 1. Automotive Steering and Suspension 2. Automotive Transmissions 3. Automotive Brakes 4. Electrical 5. Engines 6. Engine Performance 7. HVAC 8. Manual Transmissions. |
| NATEF Credential |

Programs of Study and Certifications Working Document

Below are the POS's developed by the statewide stakeholders who participated in the development process.

Focus Group's Additional Comments and Suggestions:

- Add Commercial Driver's License to support Transportation Operations Pathways

Facility and Mobile Equipment: Careers in the Facility and Mobile Equipment Maintenance pathway include the maintenance, repair, and servicing of vehicles and transportation facilities, as well as the refueling of mobile equipment. All transportation relies on equipment which must function as designed, whenever needed. The people in this pathway keep the equipment and machinery running while looking for more efficient, safe, and cost-effective ways to do so.

Program Learning Outcomes from the NASDCTE Common Career Technical Core for FACILITY AND MOBILE EQUIPMENT CAREER PATHWAY:
Note: it is expected that a student completing the Program of Studies listed below would transition to post secondary college and career being able to know and do each of these Standards, unless otherwise noted.

1. Develop preventative maintenance plans and systems to keep facility and mobile equipment inventory in operation.
2. Design ways to improve facility and equipment system performance.

Program of Study Course Sequence for FACILITY AND MOBILE EQUIPMENT CAREER PATHWAY:
Note: it is expected that a student completing the Program of Studies listed below would transition to post secondary college and career being able to know and do each of these Standards, unless otherwise noted.

| | 9 th Grade | 10 th Grade | 11 th Grade | 12 th Grade |
|---|----------------------------|------------------------|---|---|
| Career and Technical Courses and/or Degree Major Courses as Dual Credit | 918 Small Engine Mechanics | 914 Auto Service | 920 Auto Tech 2 | 921 Auto Tech 3 |
| Suggestions for Enrichment to POS | | | Dual Credit: Brakes, Suspension, Transportation Careers 913 Particular Topics in Automotive Technology | 998 Transportation Technology Internship 1 and 2 Dual Credit: Engine Performance |

Program Learning Outcomes Matrix FOR FACILITY AND MOBILE EQUIPMENT CAREER PATHWAY:
Note: each dot represents the understanding that the student taking that course would have the best opportunity to know and be able to do the CCTC knowledge and skill standards listed above.

| Courses in the POS | | | Program Learning Outcomes | |
|--------------------|------------------------|---|---------------------------|--|
| STARS No. | Course Title | 1 | 2 | |
| 918 | Small Engine Mechanics | • | | |
| 920 | Auto Tech 2 | • | • | |
| 914 | Auto Service | • | | |
| 921 | Auto Tech 3 | • | • | |

Health, Safety and Environmental Management: Careers in the Health, Safety and Environmental Management pathway involve assessing and managing risks associated with safety and environmental issues. The well-being of people and our environment is more important and challenging today than ever before in history. The people employed in this important pathway research, plan and carry out activities to make our environment safer and cleaner.

| Program Learning Outcomes from the NASDCTE Common Career Technical Core: | |
|---|---|
| 1. | Describe the health, safety and environmental rules and regulations in transportation, distribution and logistics workplaces. |
| 2. | Develop solutions to improve performance of health, safety and environmental management services. |

| Program of Study Course Sequence for HEALTH, SAFETY AND ENVIRONMENTAL MANAGEMENT CAREER PATHWAY: | | | | |
|--|-------------------------------------|--------------------------------|---|---|
| <i>Note: it is expected that a student completing the Program of Studies listed below would transition to post secondary college and career being able to know and do each of these Standards, unless otherwise noted.</i> | | | | |
| | 9 th Grade | 10 th Grade | 11 th Grade | 12 th Grade |
| Career and Technical Courses and/or Degree Major Courses as Dual Credit | 0911 Introduction To Transportation | 0995 Transportation Technology | <i>A course must be developed by a post secondary institution addressing Standard 2</i> | <i>A course must be developed by a post secondary institution addressing Standard 2</i> |
| Suggestions for Enrichment to POS | | | Dual Credit: Applied Technology in Transportation | |

| Program Learning Outcomes Matrix FOR HEALTH, SAFETY AND ENVIRONMENTAL MANAGEMENT CAREER PATHWAY: | | | | |
|---|--------------------------------|--|---------------------------|---|
| <i>Note: each dot represents the understanding that the student taking that course would have the best opportunity to know and be able to do the CCTC knowledge and skill standards listed above.</i> | | | | |
| Courses in the POS | | | Program Learning Outcomes | |
| STARS No. | Course Title | | 1 | 2 |
| 911 | Introduction To Transportation | | • | |
| 995 | Transportation Technology | | • | |

Programs of Study and Certifications Working Document

| STARS No. | Course Descriptions: |
|-----------|--|
| 911 | Introduction To Transportation - Recommended for Students Grades 9 - 12 - Course introduces the principles underlying various kinds of technicians (aircraft, auto, diesel, and marine) and how energy is converted, transmitted, and controlled. The courses also provide information on career opportunities within the field of mechanics and/or transportation. Students learn employability skills, use of tools, and safety. |
| 995 | Transportation Technology - Recommended for Students Grades 10 - 12 - Course in this category offers instruction in related topics that are necessary or helpful in occupations involving transportation technologies; such topics may include mathematics, science, and/or technical reading |

Logistics Planning and Management: Careers in the Logistics Planning and Management Services pathway involve the planning, management and control of the physical distribution of materials, products, and people. Often, more than one mode of transportation is used as distribution efforts can be complex, even national or global. These people are responsible for the plans which will ensure that cargo arrives at the right location, on time, and in the safest, most economical manner.

| Program Learning Outcomes from the NASDCTE Common Career Technical Core for Logistics Planning and Management Career Pathway: | |
|--|---|
| 1. | Develop solutions to provide and manage logistics services for the company and customers. |
| 2. | Analyze and improve performance of logistics systems to provide logistics planning and management services. |

| Program of Study Course Sequence for for LOGISTICS PLANNING AND MANAGEMENT CAREER PATHWAY: | | | | |
|--|-------------------------------------|--------------------------------|---|---|
| <i>Note: it is expected that a student completing the Program of Studies listed below would transition to post secondary college and career being able to know and do each of these Standards, unless otherwise noted.</i> | | | | |
| | 9 th Grade | 10 th Grade | 11 th Grade | 12 th Grade |
| Career and Technical Courses and/or Degree Major Courses as Dual Credit | 0911 Introduction To Transportation | 0995 Transportation Technology | 1625 Technology systems | <i>A course must be developed by a post secondary institution addressing Standard 1 & 3</i> |
| Suggestions for Enrichment to POS | | | Dual Credit: Applied Technology in Transportation | |

| Program Learning Outcomes Matrix FOR LOGISTICS PLANNING AND MANAGEMENT CAREER PATHWAY: | | | | |
|---|--------------------------------|--|---------------------------|---|
| <i>Note: each dot represents the understanding that the student taking that course would have the best opportunity to know and be able to do the CCTC knowledge and skill standards listed above.</i> | | | | |
| Courses in the POS | | | Program Learning Outcomes | |
| STAR S No. | Course Title | | 1 | 2 |
| 911 | Introduction To Transportation | | | |
| 995 | Transportation Technology | | | |
| 1625 | Technology systems | | | |

| STARS No. | Course Descriptions: |
|-----------|---|
| 911 | Introduction To Transportation - Recommended for Students Grades 9 - 12 - Course introduces the principles underlying various kinds of technicians (aircraft, auto, diesel, and marine) and how energy is converted, transmitted, and controlled. The courses also provide information on career opportunities within the field of mechanics and/or transportation. Students learn employability skills, use of tools, and safety. |
| 995 | Transportation Technology - Recommended for Students Grades 10 - 12 - Course in this category offers instruction in related topics that are necessary or helpful in occupations involving transportation technologies; such topics may include mathematics, science, and/or technical reading |
| 1625 | Technology systems - Recommended for Students Grades 9 - 12 - Course enable students to explore the designs, resources, processes, management, products, and analyses as they relate to information physical and bio/chemical technologies. The development, practical application, and impact of technologies are emphasized, as is teamwork. This course may be offered in a shop setting, a computer-driven lab, a classroom, or combination of the three. |

Sales and Service: Careers in the Sales and Service pathway involve the marketing and selling of transportation services to new customers as well as the management of existing customer relationships and customer service. Transportation businesses move passengers and freight to meet customer needs and demands. Successful businesses need skilled employees to provide excellent customer service.

| Program Learning Outcomes from the NASDCTE Common Career Technical Core for Sales and Service: | |
|---|--|
| 1. | Analyze the ongoing performance of transportation, logistics and distribution-related sales and service operations. |
| 2. | Demonstrate the use of sales and ongoing service of products and services that are transportation related to promote development of existing and future clients and customers. |

| Program of Study Course Sequence for for SALES AND SERVICE: | | | | |
|--|-------------------------------------|--------------------------------|---|---|
| <i>Note: it is expected that a student completing the Program of Studies listed below would transition to post secondary college and career being able to know and do each of these Standards, unless otherwise noted.</i> | | | | |
| | 9 th Grade | 10 th Grade | 11 th Grade | 12 th Grade |
| Career and Technical Courses and/or Degree Major Courses as Dual Credit | 0911 Introduction To Transportation | 0995 Transportation Technology | 1625 Technology systems | <i>A course must be developed by a post secondary institution addressing Standard 1 & 3</i> |
| Suggestions for Enrichment to POS | | | Dual Credit: Applied Technology in Transportation | Dual Credit: Auto Service |

| Program Learning Outcomes Matrix FOR SALES AND SERVICE: | | | | |
|---|--------------------------------|--|---------------------------|---|
| <i>Note: each dot represents the understanding that the student taking that course would have the best opportunity to know and be able to do the CCTC knowledge and skill standards listed above.</i> | | | | |
| Courses in the POS | | | Program Learning Outcomes | |
| STARS No. | Course Title | | 1 | 2 |
| 911 | Introduction To Transportation | | • | |
| 995 | Transportation Technology | | • | • |
| 1625 | Technology systems | | • | |

| STARS No. | Course Descriptions: |
|-----------|---|
| 911 | Introduction To Transportation - Recommended for Students Grades 9 - 12 - Course introduces the principles underlying various kinds of technicians (aircraft, auto, diesel, and marine) and how energy is converted, transmitted, and controlled. The courses also provide information on career opportunities within the field of mechanics and/or transportation. Students learn employability skills, use of tools, and safety. |
| 995 | Transportation Technology - Recommended for Students Grades 10 - 12 - Course in this category offers instruction in related topics that are necessary or helpful in occupations involving transportation technologies; such topics may include mathematics, science, and/or technical reading |
| 1625 | Technology systems - Recommended for Students Grades 9 - 12 - Course enable students to explore the designs, resources, processes, management, products, and analyses as they relate to information physical and bio/chemical technologies. The development, practical application, and impact of technologies are emphasized, as is teamwork. This course may be offered in a shop setting, a computer-driven lab, a classroom, or combination of the three. |

Transportation Operations: Careers in the Transportation Operations pathway are really on the move! These are the people that drive or pilot the vehicles that transport people and freight. Equally important to this pathway are the support people who ensure that any cargo transport is safe, secure, and on time.

| Program Learning Outcomes from the NASDCTE Common Career Technical Core for Transportation Operations Career Pathway: | |
|--|--|
| 1. | Develop and evaluate transportation plans to move people and/or goods to meet customer requirements. |
| 2. | Analyze performance of transportation operations in order to improve quality and service levels and increase efficiency. |
| 3. | Comply with policies, laws and regulations in order to maintain safety, security and health and mitigate the economic and environmental risk of transportation operations. |

| Program of Study Course Sequence for TRANSPORTATION OPERATIONS CAREER PATHWAY: | | | | |
|--|-------------------------------------|--------------------------------|---|-------------------------------|
| <i>Note: it is expected that a student completing the Program of Studies listed below would transition to post secondary college and career being able to know and do each of these Standards, unless otherwise noted.</i> | | | | |
| | 9 th Grade | 10 th Grade | 11 th Grade | 12 th Grade |
| Career and Technical Courses and/or Degree Major Courses as Dual Credit | 0911 Introduction To Transportation | 0995 Transportation Technology | <i>A course must be developed by a post secondary institution addressing Standard 1</i> | 1805 Marketing-Transportation |
| Suggestions for Enrichment to POS | | | Dual Credit: Applied Technology in Transportation | |

| Program Learning Outcomes Matrix FOR TRANSPORTATION OPERATIONS CAREER PATHWAY: | | | | |
|---|--------------------------------|---------------------------|---|---|
| <i>Note: each dot represents the understanding that the student taking that course would have the best opportunity to know and be able to do the CCTC knowledge and skill standards listed above.</i> | | | | |
| Courses in the POS | | Program Learning Outcomes | | |
| STAR S No. | Course Title | 1 | 2 | 3 |
| 911 | Introduction To Transportation | • | | |
| 995 | Transportation Technology | • | • | |
| 1805 | Marketing- Transportation | • | • | • |

Programs of Study and Certifications Working Document

| STARS No. | Course Descriptions: |
|-----------|--|
| 911 | Introduction To Transportation - Recommended for Students Grades 9 - 12 - Course introduces the principles underlying various kinds of technicians (aircraft, auto, diesel, and marine) and how energy is converted, transmitted, and controlled. The courses also provide information on career opportunities within the field of mechanics and/or transportation. Students learn employability skills, use of tools, and safety. |
| 995 | Transportation Technology - Recommended for Students Grades 10 - 12 - Course in this category offers instruction in related topics that are necessary or helpful in occupations involving transportation technologies; such topics may include mathematics, science, and/or technical reading |
| 1805 | Marketing - Other Specialization - Recommended for Students Grades 10 - 12 - Course covers the same scope of topics as Principals of Marketing courses (purchasing and distribution systems; advertising, display and sales; management and entrepreneurship, and so on), but do so with attention to a particular industry not specified above. The course may also cover specific topics related to the particular industry being covered. |

Transportation Systems/Infrastructure Planning, Management and

Regulations: Careers in the Transportation Systems/Infrastructure Planning, Management and Regulation pathway deal with all aspects of the design and operation of our public transportation systems – road, air, sea and rail. These functions are primarily the responsibility of people who are employed by federal, state and local transportation agencies. Many businesses work to assist these agencies in their efforts.

Program Learning Outcomes from the NASDCTE Common Career Technical Core for Transportation Systems/Infrastructure Planning, Management and Regulations Career Pathway:
Note: it is expected that a student completing the Program of Studies listed below would transition to post secondary college and career being able to know and do each of these Standards, unless otherwise noted.

| | |
|----|--|
| 1. | Develop plans to maintain and/or improve the transportation infrastructure. |
| 2. | Assess, plan and manage the implementation of transportation services. |
| 3. | Describe ways to improve the system utilization, flow, safety and environmental performance of transportation systems. |

Program of Study Course Sequence for TRANSPORTATION SYSTEMS/INFRASTRUCTURE PLANNING, MANAGEMENT AND REGULATIONS CAREER PATHWAY:

| | 9 th Grade | 10 th Grade | 11 th Grade | 12 th Grade |
|---|-------------------------------------|--------------------------------|-------------------------|-------------------------------|
| Career and Technical Courses and/or Degree Major Courses as Dual Credit | 0911 Introduction To Transportation | 0995 Transportation Technology | 1625 Technology systems | 1805 Marketing-Transportation |

Program Learning Outcomes Matrix for Transportation Systems/Infrastructure Planning, Management and Regulations Career Pathway:

Note: each dot represents the understanding that the student taking that course would have the best opportunity to know and be able to do the CCTC knowledge and skill standards listed above.

| Courses in the POS | | Program Learning Outcomes | | |
|--------------------|--------------------------------|---------------------------|---|---|
| STARS No. | Course Title | 1 | 2 | 3 |
| 911 | Introduction To Transportation | • | | |
| 995 | Transportation Technology | • | • | |
| 1625 | Technology systems | • | • | |
| 1805 | Marketing- Transportation | • | • | • |

| STARS No. | Course Descriptions: |
|-----------|--|
| 911 | Introduction To Transportation - Recommended for Students Grades 9 - 12 - Course introduces the principles underlying various kinds of technicians (aircraft, auto, diesel, and marine) and how energy is converted, transmitted, and controlled. The courses also provide information on career opportunities within the field of mechanics and/or transportation. Students learn employability skills, use of tools, and safety. |
| 995 | Transportation Technology - Recommended for Students Grades 10 - 12 - Course in this category offers instruction in related topics that are necessary or helpful in occupations involving transportation technologies; such topics may include mathematics, science, and/or technical reading |
| 1625 | Technology systems - Recommended for Students Grades 9 - 12 - Course enable students to explore the designs, resources, processes, management, products, and analyses as they relate to information physical and bio/chemical technologies. The development, practical application, and impact of technologies are emphasized, as is teamwork. This course may be offered in a shop setting, a computer-driven lab, a classroom, or combination of the three. |
| 1805 | Marketing- Transportation - Recommended for Students Grades 11 - 12 - Course covers the same scope of topics as Marketing-General courses (purchasing and distribution systems; advertising, display and sales; management and entrepreneurship, and so on), but do so with particular attention to the transportation industry. In keeping with the focus on this industry, course topics may also include identification and proper use of auto parts and accessories. |

Warehousing and Distribution Center Operations: Careers in Warehousing and Distribution Center Operations focus on the operation of transportation and distribution facilities including ports, terminals, warehouses, and other types of facilities. All cargo needs to be tracked, sorted, labeled, and loaded accurately and safely. Timing is also important, since many loads must adhere to a schedule in order to satisfy the needs of the customer.

Program Learning Outcomes from the NASDCTE Common Career Technical Core for Warehousing and Distribution Center Operations Career Pathway:
Note: it is expected that a student completing the Program of Studies listed below would transition to post secondary college and career being able to know and do each of these Standards, unless otherwise noted.

| | |
|----|--|
| 1. | Demonstrate efficient and effective warehouse and distribution center operations. |
| 2. | Describe ways to improve the performance of warehouse and distribution operations. |
| 3. | Analyze compliance with company policies and government laws and regulations in warehouse and distribution operations. |

Program of Studies Course Sequence for WAREHOUSING AND DISTRIBUTION CENTER OPERATIONS CAREER PATHWAY:

| | 9 th Grade | 10 th Grade | 11 th Grade | 12 th Grade |
|---|-------------------------------------|--------------------------------|-------------------------|--|
| Career and Technical Courses and/or Degree Major Courses as Dual Credit | 0911 Introduction To Transportation | 0995 Transportation Technology | 1625 Technology systems | <i>Has to be developed by a post secondary institution addressing Standard 3</i> |

Program Learning Outcomes Matrix for Warehousing and Distribution Center Operations Career Pathway:

Note: each dot represents the understanding that the student taking that course would have the best opportunity to know and be able to do the CCTC knowledge and skill standards listed above.

| Courses in the POS | | Program Learning Outcomes | | |
|--------------------|--------------------------------|---------------------------|---|---|
| STARS No. | Course Title | 1 | 2 | 3 |
| 911 | Introduction To Transportation | • | | |
| 995 | Transportation Technology | • | • | |
| 1625 | Technology systems | • | • | |

| STAR S No. | Course Descriptions: |
|---------------|---|
| 911 | Introduction To Transportation - Recommended for Students Grades 9 - 12 - Course introduces the principles underlying various kinds of technicians (aircraft, auto, diesel, and marine) and how energy is converted, transmitted, and controlled. The courses also provide information on career opportunities within the field of mechanics and/or transportation. Students learn employability skills, use of tools, and safety. |
| 995 | Transportation Technology - Recommended for Students Grades 10 - 12 - Course in this category offers instruction in related topics that are necessary or helpful in occupations involving transportation technologies; such topics may include mathematics, science, and/or technical reading |
| 1625 | Technology systems - Recommended for Students Grades 9 - 12 - Course enable students to explore the designs, resources, processes, management, products, and analyses as they relate to information physical and bio/chemical technologies. The development, practical application, and impact of technologies are emphasized, as is teamwork. This course may be offered in a shop setting, a computer-driven lab, a classroom, or combination of the three. |