

HANOVER COUNTY PUBLIC SCHOOLS

CAREER AND TECHNICAL EDUCATION

CAREER CLUSTERS WITH RELATED PROGRAM COMPLETER/CONCENTRATION SEQUENCES, SUGGESTED SPECIALIZATION OPTIONS, AND COMPLETER CODES

DEFINITIONS

- CONCENTRATION:** A coherent sequence of courses completed by a student in a career area. Course sequences are identified by Virginia Department of Education.
- COMPLETER:** Student meeting the requirements for a career and technical education concentration and all requirements for high school graduation or an approved alternative education program.
- SPECIALIZATION:** A choice made by a student to specialize in an occupational field by taking additional courses in a specific career area as appropriate for his/her career pathway.
- CAREER CLUSTER:** Virginia Career and Technical Education Office has adopted the nationally accepted structure of 16 career clusters and their accompanying career pathways.
- COMPLETER CODE:** Codes that apply ONLY to the annual completer report and related follow-up survey data.

Source: 2011-2012 CTE Administrative Planning Guide

AGRICULTURAL EDUCATION

Agriculture, Food and Natural Resources Career Cluster

Production, processing, marketing, distribution, financing, and development of agricultural commodities and resources including food, fiber, wood products, natural resources, horticulture, and other plant and animal products/resources.

Concentration/Completer Options

OPTIONS	COURSES	STATE COURSE #	COMPLETER CODE
A.	PA65 - Mechanical Fundamentals and Tech Systems PA66 – Power Systems	8016 Introduction to Power 8018 Agricultural Power Systems	1102 Agricultural Machinery Service
B.	PA65 - Mechanical Fundamentals and Tech Systems PA60 - Emerging Mechanical Technologies	8016 Introduction to Power 8019 Agricultural Fabrication & Emerging Technologies	1102 Agricultural Machinery Service
C.	PA70 - Applied Horticultural Sciences PA71 - Principles of Landscape Contracting	8034 Horticulture Sciences 8036 Landscaping	1105 Horticultural Science
D.	PA70 - Applied Horticultural Sciences PA72 - Plant Production and Management	8034 Horticulture Sciences 8035 Greenhouse Plant Production and Management	1105 Horticultural Science
E.	PA70 - Applied Horticultural Sciences PA68 – Turf Grass Establishment and Management	8034 Horticulture Sciences 8051	1108 Turf Grass Management
F.	PA65 - Mechanical Fundamentals and Technical Systems PA68 – Turf Grass Establishment and Management	8016 Introduction to Power 8051	1108 Turf Grass Management
G.	PA68 – Turf Grass Establishment and Management PA69 - Advanced Turf Grass Applications	8051 8054 Turf Grass Applications, Advanced	1108 Turf Grass Management
H.	PA70 - Applied Horticultural Sciences	8034	1105

	PA73 - Floriculture	Horticulture Sciences 8038	Horticultural Science
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RECOMMENDED SPECIALIZATION OPTIONS

- The three agriculture mechanics classes
- The three horticulture classes
- Two horticulture classes plus one or two turf grass classes
- Two turf grass classes plus one or two mechanical classes
- Floriculture with at least two horticulture classes
- Listed sequence plus other CTE classes related to student's career goal

BUSINESS/INFORMATION TECHNOLOGY

Courses in Business/IT can be found in three career clusters. The three tables below list the concentrator/completer options in each career cluster.

Business Management and Administration Career Cluster

Planning, organizing, directing and evaluating business functions essential to efficient and productive business operations. Career opportunities in this cluster are available in every sector of the economy.

Concentration/Completer Options

OPTIONS	COURSES	STATE COURSE #	COMPLETER CODE
A.	PA17 - Principles of Business & Marketing PA04 - Computer Applications (18 weeks) PA08 - Keyboarding (18 weeks)	6115 6617 6151	2101 Business & Information Technology
B.	PA12 - Business Management (18 weeks) PA11 - Business Law (18 weeks) PA17 - Principles of Business & Marketing	6136 6132 6115	2101 Business & Information Technology
C.	PA12 - Business Management (18 weeks) PA11 - Business Law (18 weeks) PA50 - Entrepreneurship Education	6136 6132 9094	2101 Business & Information Technology
D.	PA17 - Principles of Business & Marketing PA05 - Office Administration	6115 6621	2101 Business & Information Technology
E.	PA05 - Office Administration PA11 - Business Law (18 weeks) PA12 - Business Management (18 weeks)	6621 6132 6136	2101 Business & Information Technology

RECOMMENDED SPECIALIZATION OPTIONS

- Combine any two completer options listed
- Combine a Business/IT completer sequence with one or more marketing classes

- Listed sequence plus other CTE classes related to the student's career goal

BUSINESS/INFORMATION TECHNOLOGY

Finance Career Cluster

Planning, services for financial and investment planning, banking, insurance, and business financial management.

Concentrator/Completer Options

OPTIONS	COURSES	STATE COURSE #	COMPLETE R CODE
A.	PA13 - Accounting I PA14 - Accounting II	6320 Accounting 6321 Accounting Advanced	2110 Accounting
B.	PA13 - Accounting I PA01 - Computer Information Systems	6320 6612	2110 Accounting
C.	PA13 - Accounting I PA11 - Business Law (18 weeks) PA12 - Business Management (18 weeks)	6320 6132 6136	2110 Accounting
D.	PA13 – Accounting I PA17 - Principles of Business and Marketing	6320 6115	2110 Accounting
E.	PA13 - Accounting I PA50 - Entrepreneurship	6320 9094	2110 Accounting
F.	PA13 - Accounting I PA05 - Office Administration	6320 6621	2110 Accounting
G.	PA13 – Accounting I PA08 – Keyboarding (18 weeks) PA12 – Business Management (18 weeks)	6320 6151 6136	2110 Accounting
H.	PA13 – Accounting I PA08 – Keyboarding (18 weeks) PA11 – Business Law (18 weeks)	6320 6151 6132	2110 Accounting

NOTE: The order classes are taken is not relevant. Accounting class drives the completer code.

RECOMMENDED SPECIALIZATION OPTIONS

- Accounting I and Accounting II, plus Computer Information Systems sequence
- Accounting I and II, plus one or more additional classes listed above
- Listed sequence plus other CTE classes related to the student’s career goal

BUSINESS/INFORMATION TECHNOLOGY

Information Technology Career Cluster

Building linkages in IT occupations framework: for entry level, technical, and professional careers related to the design, development, support and management of hardware, software, multimedia, and systems integration services.

Concentrator/Completer Options

OPTIONS	COURSES	STATE COURSE #	COMPLETE R CODE
A.	PA01 - Computer Information Systems C190 - Communication Technology	6612 6670 Information Technology Fundamentals	2103 Computer Info Systems
B.	PA01 - Computer Information Systems PA06 - Adv. Computer Information Systems	6612 6613	2103 Computer Info Systems
C.	PA08 - Keyboarding (18 weeks) PA04 - Computer Applications (18 weeks) PA11 - Business Law (18 weeks) PA12 - Business Management (18 weeks)	6151 6617 6132 6136	2101 Business & Info Tech
D.	C190 - Communication Technology PA08 - Keyboarding (18 weeks) PA04 - Computer Applications (18 weeks)	6670 6151 6617	2101 Business & Info Tech
E.	PA01 - Computer Information Systems PA08 - Keyboarding (18 weeks) PA04 - Computer Applications (18 weeks)	6612 6151 6617	2103 Computer Info Systems
F.	PA04 - Computer Applications (18 weeks) PA08 - Keyboarding (18 weeks) PA05 - Office Administration	6617 6151 6621	2101 Business & Info Tech
G.	PA04 - Computer Applications (18 weeks) PA11 - Business Law (18 weeks) PA05 - Office Administration	6617 6132 6621	2101 Business & Info Tech
H.	PA04 - Computer Applications (18 weeks) PA08 - Keyboarding (18 weeks) IT800 - IB Information In A Global Society	6617 6151 IB6613	2102 Business
I.	PA17 - Principles of Business and Marketing PA01 - Computer Information Systems	6115 6612	2101 Business & Info Tech
J.	PA01 - Computer Information Systems IT800 - IB Information In A Global Society	6612 IB6613	2102 Business
K.	PA01 - Computer Information Systems	6612	2106

	HN200C - Computer Electronics I	6650 Computer Network Software Operations	Computer Network
L.	HN200C - Computer Electronics I HN201C - Computer Electronics II	6650 6651 Computer Network Software Operations, Advanced	2106 Computer Network

BUSINESS/INFORMATION TECHNOLOGY

Information Technology Career Cluster (continued)

Concentrator/Completer Options

M.	PA01 – Computer Information Systems HN305 - Digital Home Technology Integration	6612 6651 Computer Network Software Operations, Advanced	2106 Computer Network
N.	PA05 – Office Administration HN200C - Computer Electronics I	6612 6650 Computer Network Software Operations	2106 Computer Network
O.	PA05 – Office Administration HN305 - Digital Home Technology Integration	6612 6651	2106 Computer Network
P.	HN200C - Computer Electronics I HN305 - Digital Home Technology Integration	6650 6651	2106 Computer Network

RECOMMENDED SPECIALIZATION OPTIONS

- Computer Information Systems, Advanced CIS, plus Communication Technology
- Computer Information Systems, Advanced CIS, plus Computer Electronics I and II
- Combine any two completer options listed
- Combine a Business/IT completer sequence with one or more marketing classes
- Listed sequence plus other CTE classes related to the student's career goal

CAREER CONNECTIONS

Education and Training Career Cluster Concentration/Completer Options

Note: Teacher Cadet (Virginia Teachers for Tomorrow) completer options are listed under the Family and Consumer Sciences Program.

FAMILY AND CONSUMER SCIENCE

Family and Consumer Science courses are included in two career clusters. The two tables below provide the completer options for each career cluster.

Education and Training Career Cluster

Planning, managing and providing education and training services, and related learning support services.

Concentration/Completer Options

OPTIONS	COURSES	STATE COURSE #	COMPLETER CODE
A.	PA30 - Personal Development and Parenting PA33 - Introduction To Early Childhood	8232 Child Development and Parenting 8234 Introduction to Early Childhood Education and Services	7101 Early Childhood Education and Services
B.	PA33 - Introduction To Early Childhood PA36 - Early Childhood Education Services I	8234 8285 Early Childhood Education and Services I	7101 Early Childhood Education and Services
C.	PA36 - Early Childhood Education Services I PA37 - Early Childhood Education Services II	8285 8286 Early Childhood and Education Services II	7101 Early Childhood Education and Services
D.	PA36 – Early Childhood Education Services I PA50 - Entrepreneurship Education	8285 9094	7101 Early Childhood Education and Services
E.	PA38 - Teacher Cadet (Teachers for Tomorrow) PA30 - Personal Development and Parenting	9062 Virginia Teachers for Tomorrow 8232	7109 Teacher Preparation Program
F.	PA38 - Teacher Cadet (Teachers for Tomorrow) PA33 - Introduction to Early Childhood	9062 8234	7109 Teacher Preparation

			Program
G.	PA38 - Teacher Cadet (Teachers for Tomorrow)	9062	7109
	PA36 - Early Childhood Education Services I	8285	Teacher Preparation Program

RECOMMENDED SPECIALIZATION OPTIONS:

- The three Early Childhood classes
- Listed sequence plus other CTE classes related to the student's career goal

FAMILY AND CONSUMER SCIENCES

Hospitality and Tourism Career Cluster

Management, marketing and operations of restaurants and other foodservices, lodging, attractions, recreation events and travel related services.

Concentration/Completer Options

OPTIONS	COURSES	STATE COURSE #	COMPLETER CODE
A.	PA39 - Introduction to Hospitality & Culinary Careers PA30 - Personal Development and Parenting	8259 Introduction to Hospitality, Tourism, and Recreation 8232 Child Development and Parenting	7106 Hospitality Services
B.	PA39 – Introduction to Hospitality & Culinary Careers H140J – Fundamentals of Quality for the Hospitality Industry H154J – Principles of Hospitality Management	8259 8258 Introduction to Hospitality, Tourism, and Recreation (18wks) 8258	7106 Hospitality Services
C.	TS117 - Culinary Arts I TS118 – Culinary Arts II	8275 8276	7105 Culinary Arts
D.	PA39 - Introduction to Hospitality & Culinary Careers TS117 - Culinary Arts I	8259 8275	7105 Culinary Arts
E.	TS117 - Culinary Arts I PA50 - Entrepreneurship Education	8275 9094	7105 Culinary Arts

RECOMMENDED SPECIALIZATION OPTIONS:

- Complete three course sequence at Hanover Trade and Technical Center
- One option listed above plus dual credit hospitality class(s) at JSRCC
- Listed sequence plus other CTE classes related to the student's career goal

HEALTH EDUCATION

Health Science Career Cluster

Planning, managing, and providing therapeutic services, diagnostic services, health informatics, support services, and biotechnology research and development.

Concentration/Completer Options

OPTIONS	COURSES	STATE COURSE #	COMPLETER CODE
A.	HN606 - Optical Laboratory Theory I HN607 - Optical Laboratory Clinical I HN602 - Optical Theory I HN603 - Optical Dispensing Theory I	8394 8394 8394 8394	3103 Health Career
B.	HN700 - Introduction to Medical Lab. Tech HN701 - Clinical Chemistry & Lab Instrumentation HN704 - Renal Physiology HN705 - Immunology and Serology	8345 Medical Assistant I 8345 8346 Medical Assistant II 8346	3106 Medical Assistant
C.	HN900J - Dental Anatomy and Physiology HN901J - Dental Laboratory Materials HN902J - Principles of Occlusion HN903J - Seminar & Project in Dental Lab.	8328 Dental Assistant I 8394 8394 8394	3103 Health Career
D.	HN904 - Introduction to Oral Health Profession HN905 - Introduction to Oral Health HN906 - Dental Science HN907 - Practical Infection Control HN908 - Dental Materials	8328 8328 8328 8328 8328	3101 Dental Assistant
E.	HN920N - Nursing Skills I HN921N - Nursing Skills II	8357 Practical	3109 Practical Nursing

		Nursing I 8359 Practical Nursing II	
F.	HN910 - Pharmacy Technician I HN912 - Pharmacy Technician II HN913 - Pharmacy Technician II Practicum	8305 8306 8306	3115 Pharmacy Technician
G.	M111J - Emergency Medical Technician M112J - Emergency Medical Technician II	8333 Emergency Medical Technician I 8334	3102 Emergency Medical Technology

RECOMMENDED SPECIALIZATION OPTIONS:

- Any dual credit academic class
- Any Reynolds technical class within the completer program area
- Listed sequence plus other Hanover or Reynolds CTE class related to the student's career goal

JROTC (MILITARY SCIENCE)

Government and Public Administration Career Cluster

Executing governmental functions to include governance, national security, foreign service, planning, revenue and taxation, regulation, and management and administration at the local, state, and federal levels.

Concentration/Completer Options

OPTIONS	COURSES	STATE COURSE #	COMPLETER CODE
A.	MS101 – Naval Science 1 – Grade 9 MS102 – Naval Science 2 – Grade 10	7913 Military Science I 7916 Military Science II	8103 Leadership & Citizenship Dev. Program
B.	MS201 – Aerospace Science Frontiers of Aviation History – Grade 9 MS202 – Aerospace Science: The Science of Flight – Grade 10	7913 7916	8103 Leadership & Citizenship Dev. Program

MARKETING EDUCATION

Marketing Education courses can be found in two career clusters. The two tables below provide the completer options under each career cluster.

Hospitality and Tourism Career Cluster

Management, marketing and operations of restaurants and other foodservices, lodging, attractions, recreation events and travel related services.

Concentrator/Completer Options

OPTIONS	COURSES	STATE COURSE #	COMPLETER CODE
A.	PA46 - Marketing PA49 - Sports & Entertainment Marketing Management	8120 8175 Sports, Entertainment, and Recreation Marketing	4106 Sports & Recreational Marketing
B.	PA49 - Sports & Entertainment Marketing Management	8175	4106 Sports and Recreational

	PA50 - Entrepreneurship Education	9094 Entrepreneurship Education, Advanced	Marketing
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RECOMMENDED SPECIALIZATION OPTIONS:

- One option listed above plus one or two additional marketing classes
- One option listed above plus business/IT classes
- Listed sequence plus other CTE classes related to the student's career goal

MARKETING EDUCATION

Marketing, Sales and Service Career Cluster

Planning, managing, and performing marketing activities to reach organizational objectives.

Concentrator/Completer Options

OPTIONS	COURSES	STATE COURSE #	COMPLETER CODE
A.	PA17 - Principles of Business and Marketing PA46 – Marketing	8115 8120	4101 General Marketing
B.	PA17 - Principles of Business and Marketing PA49 - Sports & Entertainment Marketing Management	8115 8175 Sports, Entertainment and Recreation Marketing	4101 General Marketing
C.	PA17 - Principles of Business and Marketing PA50 - Entrepreneurship Education	8115 9094	4101 General Marketing
D.	PA46 - Marketing PA47 - Advanced Marketing	8120 8130 Marketing, Advanced	4101 General Marketing
E.	PA46 – Marketing PA50 - Entrepreneurship Education	8120 9094	4101 General Marketing

RECOMMENDED SPECIALIZATION OPTIONS:

- Three or four of the classes listed above
- One option listed above plus business/IT classes
- Listed sequence plus other CTE classes related to the student’s career goal

TECHNOLOGY EDUCATION

Technology Education classes can be found in two career clusters. The two tables below provide the concentrator/completer options in each career cluster.

Manufacturing Career Cluster

Planning, managing and performing the processing of materials into intermediate or final products and related professional and technical support activities such as production planning and control, maintenance and manufacturing/process engineering.

Concentrator/Completer Options

OPTIONS	COURSES	STATE COURSE #	COMPLETER CODE
A.	HN120M - Manufacturing Systems I HN121M - Manufacturing Systems II	8425 Manufacturing Systems 8427 Manufacturing Systems, Advanced	5105 Production Technology

RECOMMENDED SPECIALIZATION OPTIONS:

- Automated Manufacturing program plus Electronics classes
- Automated Manufacturing program plus one or more drafting classes
- Listed sequence plus other CTE classes related to the student's career goal

Science, Technology, Engineering & Math Career Cluster

Planning, managing, and providing scientific research and professional and technical services (e.g., physical science, social science, engineering) including laboratory and testing services, and research and development services.

Concentrator/Completer Options

OPTIONS	COURSES	STATE COURSE #	COMPLETER CODE
A.	PA20 - Technical Drawing and Design PA22 - Engineering Drawing	8435 8436 Engineering Drawing and Design	5106 Tech. Design & Illustration
B.	PA20 - Technical Drawing and Design PA21 - Architectural Drawing	8435 8437 Architectural Drawing and Design	5106 Tech. Design & Illustration

C.	PA25 – Principles of Technology I PA26 – Principles of Technology II	9811 9812	5107 Principles of Technology
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NOTE: No concentration/completer option for Introduction to Engineering. Programming classes are not part of any CTE concentration/completer sequence because of currently used course codes.

RECOMMENDED SPECIALIZATION OPTIONS:

- Three or four drafting classes
- Three or four electronics classes
- Electronics sequence plus Automated Manufacturing or Introduction to Engineering
- Listed sequence plus other CTE classes related to the student's career goal

TRADE AND INDUSTRIAL EDUCATION

Trade and Industrial Education classes/programs are located within nine career clusters. The nine tables below provide the concentrator/completer options in each career cluster.

Architecture and Construction Career Cluster

Designing, planning, managing, building and maintaining the build environment.

Concentrator/Completer Option

OPTIONS	COURSES	STATE COURSE #	COMPLETER CODE
A.	TS103 - Building Trades I TS104 - Building Trades II	8515 8516	6203 Building Trades

RECOMMENDED SPECIALIZATION OPTIONS:

- Complete the three course Building Trades sequence
- Take Agriculture Mechanical Fundamentals in grade 9 and complete the three Building Trades classes
- Complete the three course Building Trades sequence and take Basic Technical Drafting

Hospitality and Tourism Career Cluster

Management, marketing and operations of restaurants and other foodservices, lodging, attractions, recreation events and travel related services.

Concentrator/Completer Option

OPTIONS	COURSES	STATE COURSE #	COMPLETER CODE
A.	TS106 – Building Management I TS107 – Building Management II	8590 8591	6209 Building Management

Human Services Career Cluster

Preparing individuals for employment in career pathways that relate to families and human needs.

Concentrator/Completer Options

OPTIONS	COURSES	STATE COURSE #	COMPLETER CODE
A.	TS109 - Cosmetology I TS110 - Cosmetology II	8527 8528	6403 Cosmetology
B.	TS112 - Nail Technology I TS113 - Nail Technology II	8692 Nail Technician I 8693 Nail Technician II	6407 Nail Technician

RECOMMENDED SPECIALIZATION OPTIONS:

- Complete the three course Hanover Cosmetology sequence and take the state certification test
- Add an advanced science class to any Human Services options

TRADE AND INDUSTRIAL EDUCATION

Information Technology Career Cluster

Building linkages in IT occupations framework: for entry level, technical, and professional careers related to the design, development, support and management of hardware, software, multimedia, and systems integration services.

Concentrator/Completer Options

OPTIONS	COURSES	STATE COURSE #	COMPLETER CODE
A.	HN306C – Computer Networking and Hardware Operations I (18 wks) HN307C – Computer Networking and Hardware Operations II (18 wks) HN308C – Computer Networking and Hardware Operations III (18 wks) HN309C – Computer Networking and Hardware Operations IV (18 wks)	8542 Computer Network Hardware Operations I 8543 Computer Network Hardware Operations II 8544 Computer Network Hardware Operations III 8545 Computer Network Hardware Operations IV	6113 Computer Network Hardware Operations
B.	HN301C - Computer Networking and Hardware Operations I (36 wks) (changed to HN306C & HN307C beginning in the 2010-11 school year) HN308C – Computer Networking and Hardware Operations III (18 wks) HN309C – Computer Networking and Hardware Operations IV (18 wks)	6650 Computer Network Software Operations 8544 8545	6113 Computer Network Hardware Operations
C.	HN301C - Computer Networking and Hardware Operations I (36 wks) (changed to HN306C & HN307C beginning in the 2010-11 school year) HN302C – Computer Networking and Hardware Operations II (36 wks) (changed to HN308C & HN309C beginning in the 2010-11 school year)	6650 6651 Computer Network Software Operations Advanced	6113 Computer Network Hardware Operations

D.	HN301C – Computer Networking and Hardware Operations I (36 wks) (changed to HN306C & HN307C beginning in the 2010-11 school year)	6650	6113 Computer Network Hardware Operations
	HN305C – Digital Home Technology Integration	6651	
E.	PA01 – Computer Information Systems HN301C - Computer Networking and Hardware Operations I (36 wks) (changed to HN306C & HN307C beginning in the 2010-11 school year)	6612 6650	6113 Computer Network Hardware Operations

RECOMMENDED SPECIALIZATION OPTIONS:

- Add Computer Networking and Hardware classes to Computer Systems program
- Add Electronics class(s) to Computer Systems Technology sequence
- Complete Computer Systems sequence plus computer software related Business/IT sequence

TRADE AND INDUSTRIAL EDUCATION

Science, Technology, Engineering and Mathematics Career Cluster

Planning, management, and providing scientific research and professional and technical services (e.g., physical science, social science, engineering) including laboratory and testing services, and research and development services.

Concentrator/Completer Option

A.	HN101E - Electronics I	8536	6108 Electronics Technology
	HN102E – Electronics II	8537 Electronics Technology II	

Law, Public Safety, Corrections, and Security Career Cluster

Planning, managing, and providing legal, public safety, protective services and homeland securing, including professional and technical support services.

Concentrator/Completer Options

OPTIONS	COURSES	STATE COURSE #	COMPLETER CODE
A.	F100J - Introduction to Fire Science F105J - Fire Suppression Operations L100J - Survey of Criminal Justice L105J - The Juvenile Justice System	8705 Firefighting I 8705 8702 Criminal Justice I 8702	6501 Firefighting
B.	L100J - Survey of Criminal Justice L105J - The Juvenile Justice System L128J - Patrol Administration & Operations L228J - Narcotics and Dangerous Drugs	8702 8702 8702 8702	6502 Criminal Justice

RECOMMENDED SPECIALIZATION OPTIONS:

- Any dual credit Reynolds academic class leading to post-secondary degree
- Any additional technical class within the selected occupational sequence

TRADE AND INDUSTRIAL EDUCATION

Manufacturing Career Cluster

Planning, managing, and performing, the processing of materials into intermediate or final products and related professional and technical support activities such as production planning and control, maintenance and manufacturing/process engineering.

Concentrator/Completer Option

OPTIONS	COURSES	STATE COURSE #	COMPLETER CODE
A.	TS114 - Industrial Technology I	8575 Industrial Maintenance Technology I	6301 Industrial Maintenance Technology
	TS115 - Industrial Technology II	8576 Industrial Maintenance Technology II	

RECOMMEDED SPECIALIZATION SEQUENCES:

- Complete the three Industrial Technology classes
- Complete Agriculture Mechanical Fundamentals in grade 9 and complete the three Industrial Technology classes
- Add agriculture mechanics classes to the Precision Machining sequence
- Add Electronics to the three Industrial Technology classes
- Complete any listed sequence and take additional mathematics classes

TRADE AND INDUSTRIAL EDUCATION

Transportation, Distribution and Logistics Career Cluster

Planning, management, and movement of people, materials, and goods by road, pipeline, air, rail and water and related professional and technical support services such as transportation infrastructure planning and management, logistics services, mobile equipment and facility maintenance.

Concentration/Completer Options

OPTIONS	COURSES	STATE COURSE #	COMPLETER CODE
A.	TS100 - Automotive Technology I TS101 - Automotive Technology II	8506 Automotive Technology I (Certified) 8507 Automotive Technology II (Certified)	6605 Automotive Service Technology
B.	HN110A - Automotive Systems HN111A - Automotive Electronics and Electricity HN112A - Automotive Diagnosis	8506 8507 8508 Automotive Technology III (Certified)	6605 Automotive Service Technology
C.	TS120 – Small Engine Technology I TS121 – Small Engine Technology II	8725 8726	6609 Small Engine Repair

RECOMMENDED SPECIALIZATION SEQUENCES:

- Complete the Hanover three course sequence in Automotive Technology
- Add automotive courses from option B to the three course Automotive Technology sequence
- Complete Agriculture Mechanics Fundamentals in grade 9 before beginning the Automotive Technology sequence

Arts, Audio/Video Tech & Communications Career Cluster

Designing, producing, exhibiting, performing, writing, and publishing multimedia content including visual and performing arts and design, journalism, and entertainment services.

Concentration/Completer Option

OPTIONS	COURSES	STATE COURSE #	COMPLETER CODE
A.	C192 – Mass Communications II C193 – Mass Communications III	8689 Television and Media Production II 8690	6111 Television Production

GRADE EIGHT CTE CLASSES WITH APPROPRIATE CAREER CLUSTER

New regulations require that students be identified within a career cluster beginning with the CTE class taken in grade eight. Students may change programs and career clusters anytime during grades eight through twelve. Grade eight classes are not part of any concentrator/completer sequence.

PROGRAM	CLASS/ES	STATE COURSE #	CAREER CLUSTER
Agriculture	EL07 - Ag. Mechanics & Plant Science	8004 Agriscience & Technology	Agriculture, Food & Natural Resources
Family and Consumer Science	EL03 - Life Management Skills, Grade 8 (36 weeks)	8245 Family and Consumer Science Exploratory III	Human Services
Information Technology	EL13 - Elements of Keyboarding EL14 - Elements of Computer Concepts EL31 - Exploring Computer Programming EL32 - Exploring Computer Publishing	6150 Keyboarding (MS) 6609 Computer Solutions 6617 Computer Applications 6617	Information Technology
Technology Education	EL06 - Technological Systems	8462	Science, Technology, Engineering and Math