

STATE BOARD OF COMMUNITY COLLEGES
CURRICULUM STANDARD REVISIONS

The State Board is asked to approve revisions to the following curriculum standards:

Cape Fear Community College

Marine Technology (A15320)

Cleveland Community College

Automation Engineering Technology (A40120)

College of The Albemarle

Aviation Systems Technology (A60200)

Haywood Community College

Medical Assisting (A45400)

Lenoir Community College

Therapeutic Massage (A45750)

Contact Person:

Jennifer Frazelle, Director

Academic Programs

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CURRICULUM STANDARD REVISION

**Cape Fear Community College
Marine Technology (A15320)**

Cape Fear Community College is seeking approval to revise the Marine Technology (A15320) curriculum standard, effective Fall 2015.

Proposed Revision

- Revise the program major description.

Rationale: The proposed revision will more accurately describe the Marine Technology program.

Vote Results: Cape Fear Community College is the only college approved to offer the Marine Technology (A15320) program.

Director: Jennifer Frazelle

PROPOSED Curriculum Standard for Natural Resource Systems: Marine Technology			
Career Cluster: Agriculture, Food, and Natural Resources **			
Cluster Description: The production, processing, marketing, distribution, financing, and development of agricultural commodities and resources including food, fuel, fiber, wood products, natural resources, horticulture, and other plant and animal products/resources.			
Pathway: Natural Resource Systems		Effective Term: Fall 2013 (2013*03) Fall 2015 (2015*03)	
Program Majors Under Pathway			
Program Major / Classification of Code	Instruction Programs (CIP)	Credential Level(s) Offered	Program Major Code
Marine Science	CIP Code 26.1302	AAS/Diploma/Certificate	A15310
Marine Technology	CIP Code: 03.0301	AAS/Diploma/Certificate	A15320
Pathway Description:			
<p>These curricula prepare individuals for a variety of marine-related occupations such as marine conservation, water analysis, marine scientific research support and commercial fishing. Individuals will be prepared as naturalists within the ecotourism industry and be trained in observational and measurement techniques aboard a variety of vessels including ocean-going research vessels.</p> <p>Course work includes a unique blend of traditional and contemporary vocational, technical, and scientific marine education. Course work specific for Marine Sciences includes instruction in biological sciences, environmental sciences, and marine sciences. Field and laboratory experiences prepare students to identify, observe, and collect scientific data associated with the fauna and flora found in the rivers, estuaries, sounds, and ocean. Course work in Marine Technologies includes instruction in the use of physical, chemical, meteorological, biological, and geological oceanographic instrumentation and sampling equipment.</p> <p>Graduates are prepared for employment opportunities with aquariums, fisheries, corps of engineers, marine patrol, ecotourism companies, commercial fishing industries, entry-level field or laboratory positions with industries, state and federal agencies, and educational facilities associated with marine science and research. Career opportunities include oceanography, environmental science, marine biology, geophysical exploration, and fisheries-related employment.</p>			
<p><i>Program Major Description: Choose one of the following 4th paragraphs to use in conjunction with the first three paragraphs of the pathway description above for documentation used to identify each Program Major:</i></p> <p>Marine Science: A program that focuses on the scientific study of the ecology and behavior of microbes, plants, and animals inhabiting oceans, coastal waters, and saltwater wetlands and their interactions with the physical environment. Potential course work includes instruction in chemical, physical, and geological oceanography; molecular, cellular, and biochemical studies; marine microbiology; marine botany; ichthyology; mammalogy; marine population dynamics and biodiversity; reproductive biology; studies of specific species, phyla, habitats, and ecosystems; marine paleocology and paleontology; and applications to fields such as fisheries science and biotechnology.</p> <p>Marine Technology: A program that focuses on the scientific study of the husbandry and production of non-domesticated fish and shellfish populations for recreational and commercial purposes and the management of fishing and marine/aquatic product processing to ensure adequate conservation and efficient utilization. Potential course work includes instruction in the principles of marine/aquatic biology, freshwater and saltwater ecosystems, water resources, fishing production operations and management, fishing policy and regulation, and the management of recreational and commercial fishing activities.</p> <p>Marine Technology: A program that provides the practical and academic skills essential for success in marine scientific support. Training in the operation and maintenance of seismic and hydrographic instrumentation including: side scan sonar, multibeam echo sounders, and sub-bottom profilers is provided in the classroom and underway at sea. Additional course work includes: classic and digital navigation techniques, practical applications of boat handling, seamanship, marlinspike seamanship, and safety at sea. Instruction applicable to fisheries science and environmental assessment is provided.</p>			

*Within the degree program, the institution shall include opportunities for the achievement of competence in reading, writing, oral communication, fundamental mathematical skills, and basic use of computers.

Approved by the State Board of Community Colleges on August 16, 2012; Editorial Revision 12/14/12; Editorial Revision 08/21/13; CRC Revised—Electronic Only 05/29/14; SBCC Revised _____.

I. General Education Academic Core

[Curriculum Requirements for associate degree, diploma, and certificate programs in accordance with 1D SBCCC 400.97 (3)]: Degree programs must contain a minimum of 15 semester hours including at least one course from each of the following areas: humanities/fine arts, social/behavioral sciences, and natural sciences/mathematics. Degree programs must contain a minimum of 6 semester hours of communications. Diploma programs must contain a minimum of 6 semester hours of general education; 3 semester hours must be in communications. General education is optional in certificate programs.

Natural Resource Systems: Marine Technology

Recommended General Education Academic Core	AAS	Diploma	Certificate
Minimum General Education Hours Required:	15 SHC	6 SHC	0 SHC
<p><i>Courses listed below are recommended general education courses for this curriculum standard. Colleges may choose to include additional or alternative general education courses to meet local curriculum needs.</i></p> <p><i>*Recommended certificate and diploma level curriculum courses. These courses may <u>not</u> be included in associate degree programs.</i></p> <p>Communication:</p> <p>*COM 101 Workplace Communication 3 SHC COM 110 Introduction to Communication 3 SHC COM 120 Intro Interpersonal Com 3 SHC COM 231 Public Speaking 3 SHC *ENG 101 Applied Communications I 3 SHC *ENG 102 Applied Communications II 3 SHC ENG 110 Freshman Composition 3 SHC ENG 111 Expository Writing 3 SHC ENG 112 Argument-Based Research 3 SHC ENG 114 Prof Research & Reporting 3 SHC ENG 115 Oral Communication 3 SHC ENG 116 Technical Report Writing 3 SHC</p> <p>Humanities/Fine Arts:</p> <p>*HUM 101 Values in the Workplace 2 SHC HUM 110 Technology and Society 3 SHC HUM 115 Critical Thinking 3 SHC HUM 230 Leadership Development 3 SHC PHI 230 Introduction to Logic 3 SHC PHI 240 Introduction to Ethics 3 SHC</p> <p>Social /Behavioral Sciences:</p> <p>ECO 151 Survey of Economics 3 SHC ECO 251 Prin of Microeconomics 3 SHC GEO 110 Introduction to Geography 3 SHC GEO 111 World Regional Geography 3 SHC *PSY 101 Applied Psychology 3 SHC *PSY 102 Human Relations 2 SHC PSY 118 Interpersonal Psychology 3 SHC PSY 135 Group Processes 3 SHC PSY 150 General Psychology 3 SHC *SOC 105 Social Relationships 3 SHC SOC 210 Introduction to Sociology 3 SHC SOC 215 Group Processes 3 SHC</p> <p>Natural Sciences/Mathematics:</p> <p>BIO 140 Environmental Biology 3 SHC BIO 160 Introductory Life Science 3 SHC *MAT 101 Applied Mathematics I 3 SHC MAT 110 Mathematical Measurement 3 SHC MAT 115 Mathematical Models 3 SHC MAT 120 Geometry and Trigonometry 3 SHC MAT 121 Algebra/Trigonometry I 3 SHC MAT 140 Survey of Mathematics 3 SHC MAT 151 Statistics I 3 SHC MAT 155 Statistical Analysis 3 SHC PHY 110 Conceptual Physics 3 SHC PHY 121 Applied Physics I 4 SHC</p>	<p>6 SHC</p> <p>3 SHC</p> <p>3 SHC</p> <p>3 SHC</p>	<p>3-6 SHC</p> <p>0-3 SHC</p> <p>0-3 SHC</p> <p>0-3 SHC</p>	<p>Optional</p> <p>Optional</p> <p>Optional</p> <p>Optional</p>

II. Major Hours. AAS, diploma, and certificate programs must include courses which offer specific job knowledge and skills. Work-based learning may be included in associate in applied science degrees up to a maximum of 8 semester hours of credit; in diploma programs up to a maximum of 4 semester hours of credit; and in certificate programs up to a maximum of 2 semester hours of credit. Below is a description of each section under Major Hours.

- A. Technical Core.** The technical core is comprised of specific courses which are required for all Program Majors under this Curriculum Standard. A diploma program offered under an approved AAS program standard or a certificate which is the highest credential level awarded under an approved AAS program standard must include a minimum of 12 semester hours credit derived from the curriculum core courses or core subject area of the AAS program.
- B. Program Major(s).** The Program Major must include a minimum of 12 semester hours credit from required subjects and/or courses. The Program Major is in addition to the technical core.
- C. Other Major Hours.** Other major hours must be selected from prefixes listed on the curriculum standard. A maximum of 9 semester hours of credit may be selected from each prefix listed, with the exception of prefixes listed in the core.

Natural Resource Systems: Marine	AAS	Diploma	Certificate
Minimum Major Hours Required:	49 SHC	30 SHC	12 SHC
<p>A. Technical Core:</p> <ul style="list-style-type: none"> *MSC 122 Boat Handling/Seamanship 3 SHC *MSC 124 Industrial Skills 3 SHC *MSC 132 Fishing Gear Tech I 3 SHC *MSC 150 Marine Navigation 3 SHC *MSC 160 Oceanography 4 SHC MSC 180 Water Analysis 3 SHC MSC 276 Marine Vertebrate Zoo 4 SHC <p>B. Program Major(s):</p> <p>Marine Science <i>Select a minimum of 12 SHC from the following courses for the Marine Science AAS program:</i></p> <ul style="list-style-type: none"> BIO 111 General Biology I 4 SHC BIO 146 Regional Natural History 4 SHC BIO 243 Marine Biology 4 SHC <p>Ecology. Select 4-7 SHC:</p> <ul style="list-style-type: none"> BIO 145 Ecology 4 SHC <i>or</i> ENV 110 Environmental Science 3 SHC <i>and</i> ENV 220 Applied Ecology 4 SHC <p><i>Select a minimum of 12 SHC from technical core or program major courses for a diploma in Marine Science.</i></p> <p>Marine Technology <i>Select a minimum of 12 SHC from the following courses for the Marine Technology AAS program:</i></p> <ul style="list-style-type: none"> *MSC 110 Training Cruise I 1 SHC *MSC 112 Training Cruise II 1 SHC *MSC 114 Training Cruise III 1 SHC *MSC 126 Marine Engines 2 SHC *MSC 134 Fishing Gear Technology II 2 SHC *MSC 152 Marine Instrumentation 2 SHC *MSC 172 Marine Biology 3 SHC *MSC 174 Marine Invertebrate Zoo 4 SHC <p><i>Courses required for the Marine Technology diploma are designated with *</i></p>	35 SHC	12- 32 SHC	
C. Other Major Hours.			

To be selected from the following prefixes:

AGR, AQU, BIO, BUS, CHM, CIS, CSC, DFT, ELN, ETR, ENV, HEA, FOR, FWL, GIS, HOR, REC, TRF, MAT, MSC, PED, PHO, PHY, REC, TXY, VEN, WBL, WLD, WPP and ZAS

Up to three semester hour credits may be selected from the following prefixes: ARA, ASL, CHI, FRE, GER, ITA, JPN, LAT, POR, RUS and SPA.

III. Other Required Hours

A college may include courses to meet graduation or local employer requirements in a certificate (0-1 SHC), diploma (0-4 SHC), or an associate in applied science (0-7 SHC) program. These curriculum courses shall be selected from the Combined Course Library and must be approved by the System Office prior to implementation. Restricted, unique, or free elective courses may not be included as other required hours.

IV. Employability Competencies

Fundamental competencies that address soft skills vital to employability, personal, and professional success are listed below. Colleges are encouraged to integrate these competencies into the curriculum by embedding appropriate student learning outcomes into one or more courses or through alternative methods.

- A. Interpersonal Skills and Teamwork** – The ability to work effectively with others, especially to analyze situations, establish priorities, and apply resources for solving problems or accomplishing tasks.
- B. Communication** – The ability to effectively exchange ideas and information with others through oral, written, or visual means.
- C. Integrity and Professionalism** – Workplace behaviors that relate to ethical standards, honesty, fairness, respect, responsibility, self-control, criticism and demeanor.
- D. Problem-solving** – The ability to identify problems and potential causes while developing and implementing practical action plans for solutions.
- E. Initiative and Dependability** – Workplace behaviors that relate to seeking out new responsibilities, establishing and meeting goals, completing tasks, following directions, complying with rules, and consistent reliability.
- F. Information processing** – The ability to acquire, evaluate, organize, manage, and interpret information.
- G. Adaptability and Lifelong Learning** – The ability to learn and apply new knowledge and skills and adapt to changing technologies, methods, processes, work environments, organizational structures and management practices.
- H. Entrepreneurship** – The knowledge and skills necessary to create opportunities and develop as an employee or self-employed business owner.

*An **Employability Skills Resource Toolkit** has been developed by NC-NET for the competencies listed above.

Additional information is located at: <http://www.nc-net.info/employability.php>

**The North Carolina Career Clusters Guide was developed by the North Carolina Department of Public Instruction and the North Carolina Community College system to link the academic and Career and Technical Education programs at the secondary and postsecondary levels to increase student achievement. Additional information about Career Clusters is located at: http://www.nc-net.info/NC_career_clusters_guide.php or <http://www.careertech.org>.

Summary of Required Semester Hour Credits (SHC) for each credential:

	AAS	Diploma	Certificate
Minimum General Education Hours	15	6	0
Minimum Major Hours	49	30	12
Other Required Hours	0-7	0-4	0-1
Total Semester Hours Credit (SHC)	64-76	36-48	12-18

CURRICULUM STANDARD REVISION

**Cleveland Community College
Automation Engineering Technology (A40120)**

Cleveland Community College is seeking approval to revise the Automation Engineering Technology (A40120) curriculum standard, effective Fall 2015.

Proposed Revision:

Create a *Specialty* subject area that contains the following courses

ATR 121	Intro to Machine Vision (<i>previously a required course</i>)
BAT 111	Building Automation Systems
HYD 110	Hydraulics/Pneumatics I
MEC 130	Mechanisms
MNT 250	PLC Interfacing

Rationale of Requesting College: The additional courses within the specialty area will aide student skill development in various technologies that are common to the automation industry.

Vote Results:

Colleges approved to offer the program: 2
Colleges in favor of the revision: 2

Coordinator: Frank Sculetta

**PROPOSED Curriculum Standard for Engineering and Technology:
Applied, Automation, Mechatronics Engineering Technology**

Career Cluster: Science, Technology, Engineering, Mathematics**

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

Pathway: Engineering and Technology

Effective Term: ~~Fall 2013 (2013*03)~~

Fall 2015 (2015*03)

Program Majors Under Pathway

Program Major / Classification of Instruction Programs (CIP) Code	Credential Level(s) Offered	Program Major Code
Applied Engineering Technology	CIP Code: 15.0000	AAS/Diploma/Certificate
Automation Engineering Technology	CIP Code: 15.0406	AAS/Diploma/Certificate
Mechatronics Engineering Technology	CIP Code: 15.0403	AAS/Diploma/Certificate

Pathway Description: These curriculums are designed to prepare students through the study and application of principles from mathematics, natural sciences, and technology and applied processes based on these subjects.

Course work includes mathematics, natural sciences, engineering sciences and technology.

Graduates should qualify to obtain occupations such as technical service providers, materials and technologies testing services, process improvement technicians, engineering technicians, industrial and technology managers, or research technicians.

Program Description: Choose one of the following 4th paragraphs to use in conjunction with the first three paragraphs of the pathway description above for documentation used to identify each Program Major:

Applied Engineering Technology: A course of study that prepares the students to use basic engineering principles and technical skills to solve technical problems in various types of industry. The course work emphasizes analytical and problem-solving skills. The curriculum includes courses in safety, math, physics, electricity, engineering technology, and technology-specific specialty areas. Graduates should qualify for employment in a wide range of positions in research and development, manufacturing, sales, design, inspection, or maintenance. Employment opportunities exist in automation, computer, electrical, industrial, or mechanical engineering fields, where graduates will function as engineering technicians.

Automation Engineering Technology: A course of study that prepares the students to use basic engineering principles and technical skills to develop, install, calibrate, modify and maintain automated systems. Includes instruction in computer systems; electronics and instrumentation; programmable logic controllers (PLCs); electric, hydraulic and pneumatic control systems; actuator and sensor systems; process control; robotics; applications to specific industrial tasks. The graduates of this curriculum will be prepared for employment in industries that utilize control systems, computer hardware and software, electrical, mechanical and electromechanical devices in their automation systems.

Mechatronics Engineering Technology: A course of study that prepares the students to use basic engineering principles and technical skills in developing and testing automated, servomechanical, and other electromechanical systems. Includes instruction in prototype testing, manufacturing and operational testing, systems analysis and maintenance procedures. Graduates should be qualified for employment in industrial maintenance and manufacturing including assembly, testing, startup, troubleshooting, repair, process improvement, and control systems, and should qualify to sit for Packaging Machinery Manufacturers Institute (PMMI) mechatronics or similar industry examinations.

**Within the degree program, the institution shall include opportunities for the achievement of competence in reading, writing, oral communication, fundamental mathematical skills, and basic use of computers.*

PROPOSED

I. General Education Academic Core

[Curriculum Requirements for associate degree, diploma, and certificate programs in accordance with 1D SBCCC 400.97 (3)]: Degree programs must contain a minimum of 15 semester hours including at least one course from each of the following areas: humanities/fine arts, social/behavioral sciences, and natural sciences/mathematics. Degree programs must contain a minimum of 6 semester hours of communications. Diploma programs must contain a minimum of 6 semester hours of general education; 3 semester hours must be in communications. General education is optional in certificate programs.

Engineering and Technology: Applied, Automation and Mechatronics Engineering Technology

General Education Academic Core	AAS	Diploma	Certificate
Minimum General Education Hours Required:	15 SHC	6 SHC	0 SHC
<p><i>Courses listed below are recommended general education courses for this curriculum standard. Colleges may choose to include additional or alternative general education courses to meet local curriculum needs.</i></p> <p><i>*Recommended certificate and diploma level curriculum courses. These courses may <u>not</u> be included in associate degree programs.</i></p> <p>Communications:</p> <p>*COM 101 Workplace Communication 3 SHC COM 110 Introduction to Communication 3 SHC COM 120 Intro Interpersonal Com 3 SHC COM 231 Public Speaking 3 SHC *ENG 101 Applied Communications I 3 SHC *ENG 102 Applied Communications II 3 SHC ENG 110 Freshman Composition 3 SHC ENG 111 Writing and Inquiry 3 SHC ENG 114 Professional Research & Reporting 3 SHC ENG 116 Technical Report Writing 3 SHC</p> <p>Humanities/Fine Arts:</p> <p>*HUM 101 Values in the Workplace 2 SHC HUM 110 Technology and Society 3 SHC HUM 115 Critical Thinking 3 SHC HUM 230 Leadership Development 3 SHC PHI 230 Introduction to Logic 3 SHC PHI 240 Introduction to Ethics 3 SHC</p> <p>Social/Behavioral Sciences:</p> <p>ECO 151 Survey of Economics 3 SHC ECO 251 Prin of Microeconomics 3 SHC GEO 110 Introduction to Geography 3 SHC GEO 111 World Regional Geography 3 SHC GEO 131 Physical Geography I 4 SHC *PSY 101 Applied Psychology 3 SHC *PSY 102 Human Relations 2 SHC PSY 118 Interpersonal Psychology 3 SHC PSY 135 Group Processes 3 SHC PSY 150 General Psychology 3 SHC *SOC 105 Social Relationships 3 SHC SOC 210 Introduction to Sociology 3 SHC SOC 215 Group Process 3 SHC</p> <p>Natural Sciences/Mathematics:</p> <p>MAT 120 Geometry and Trigonometry 3 SHC MAT 121 Algebra/Trigonometry I 3 SHC MAT 161 College Algebra 3 SHC MAT 171 Precalculus Algebra 3 SHC MAT 175 Precalculus 4 SHC MAT 223 Applied Calculus 3 SHC MAT 271 Calculus I 4 SHC</p>	<p>6 SHC</p> <p>3 SHC</p> <p>3 SHC</p> <p>3 SHC</p>	<p>3-6 SHC</p> <p>0-3 SHC</p> <p>0-3 SHC</p> <p>0-3 SHC</p>	<p>Optional</p> <p>Optional</p> <p>Optional</p> <p>Optional</p>

PROPOSED

II. Major Hours. AAS, diploma, and certificate programs must include courses which offer specific job knowledge and skills. Work-based learning may be included in associate in applied science degrees up to a maximum of 8 semester hours of credit; in diploma programs up to a maximum of 4 semester hours of credit; and in certificate programs up to a maximum of 2 semester hours of credit. Below is a description of each section under Major Hours.

- A. Technical Core.** The technical core is comprised of specific courses which are required for all Program Majors under this Curriculum Standard. A diploma program offered under an approved AAS program standard or a certificate which is the highest credential level awarded under an approved AAS program standard must include a minimum of 12 semester hours credit derived from the curriculum core courses or core subject area of the AAS program.
- B. Program Major(s).** The Program Major must include a minimum of 12 semester hours credit from required subjects and/or courses. The Program Major is in addition to the technical core.
- C. Other Major Hours.** Other major hours must be selected from prefixes listed on the curriculum standard. A maximum of 9 semester hours of credit may be selected from any prefix listed, with the exception of prefixes listed in the core.

<i>Engineering and Technology: Applied, Automation, Mechatronics Engineering Technology</i>	AAS	Diploma	Certificate																																																			
Minimum Major Hours Required:	49 SHC	30 SHC	12 SHC																																																			
<i>Courses required for a diploma are designated with *</i>	16-44 SHC	16-24 SHC																																																				
<p>A. Technical Core:</p> <p style="padding-left: 20px;">*Computer Applications <i>Choose one:</i></p> <table style="width: 100%; border-collapse: collapse;"> <tr><td style="width: 150px;">CIS 110</td><td>Introduction to Computers</td><td style="text-align: right;">3 SHC</td></tr> <tr><td>EGR 111</td><td>Eng Comp and Careers</td><td style="text-align: right;">3 SHC</td></tr> <tr><td>EGR 125</td><td>Appl Software for Tech</td><td style="text-align: right;">2 SHC</td></tr> <tr><td>ELC 127</td><td>Software for Technicians</td><td style="text-align: right;">2 SHC</td></tr> </table> <p style="padding-left: 20px;">*Safety <i>Choose one:</i></p> <table style="width: 100%; border-collapse: collapse;"> <tr><td style="width: 150px;">ISC 112</td><td>Industrial Safety</td><td style="text-align: right;">2 SHC</td></tr> <tr><td>ISC 115</td><td>Construction Safety</td><td style="text-align: right;">2 SHC</td></tr> </table> <p>B. Program Major(s): <i>For AAS Degree select one program major.</i></p> <p style="padding-left: 20px;"><u>Applied Engineering Technology</u></p> <p style="padding-left: 20px;">*Computers <i>Choose one:</i></p> <table style="width: 100%; border-collapse: collapse;"> <tr><td style="width: 150px;">DFT 119</td><td>Basic CAD</td><td style="text-align: right;">2 SHC</td></tr> <tr><td>ELC 127</td><td>Software for Technicians</td><td style="text-align: right;">2 SHC</td></tr> </table> <p style="padding-left: 20px;">*Electricity <i>Choose one:</i></p> <table style="width: 100%; border-collapse: collapse;"> <tr><td style="width: 150px;">ELC 131</td><td>Circuit Analysis I</td><td style="text-align: right;">4 SHC</td></tr> <tr><td>ELC 138</td><td>DC Circuit Analysis</td><td style="text-align: right;">4 SHC</td></tr> <tr><td>ELC 139</td><td>AC Circuit Analysis</td><td style="text-align: right;">4 SHC</td></tr> </table> <p style="padding-left: 20px;">*Engineering <i>Choose one:</i></p> <table style="width: 100%; border-collapse: collapse;"> <tr><td style="width: 150px;">HYD 110</td><td>Hydraulics/Pneumatics I</td><td style="text-align: right;">3 SHC</td></tr> <tr><td>HYD 112</td><td>Hydraulics/Med/Heavy Duty</td><td style="text-align: right;">2 SHC</td></tr> <tr><td>HYD 115</td><td>Industrial Hydraulics</td><td style="text-align: right;">3 SHC</td></tr> <tr><td>MNT 165</td><td>Mechanical Industrial Sys</td><td style="text-align: right;">2 SHC</td></tr> </table> <p style="padding-left: 20px;">*Motors and Controls <i>Choose one:</i></p> <table style="width: 100%; border-collapse: collapse;"> <tr><td style="width: 150px;">ELC 117</td><td>Motors and Controls</td><td style="text-align: right;">4 SHC</td></tr> <tr><td>ELC 128</td><td>Intro to PLC</td><td style="text-align: right;">3 SHC</td></tr> </table>	CIS 110	Introduction to Computers	3 SHC	EGR 111	Eng Comp and Careers	3 SHC	EGR 125	Appl Software for Tech	2 SHC	ELC 127	Software for Technicians	2 SHC	ISC 112	Industrial Safety	2 SHC	ISC 115	Construction Safety	2 SHC	DFT 119	Basic CAD	2 SHC	ELC 127	Software for Technicians	2 SHC	ELC 131	Circuit Analysis I	4 SHC	ELC 138	DC Circuit Analysis	4 SHC	ELC 139	AC Circuit Analysis	4 SHC	HYD 110	Hydraulics/Pneumatics I	3 SHC	HYD 112	Hydraulics/Med/Heavy Duty	2 SHC	HYD 115	Industrial Hydraulics	3 SHC	MNT 165	Mechanical Industrial Sys	2 SHC	ELC 117	Motors and Controls	4 SHC	ELC 128	Intro to PLC	3 SHC			
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PROPOSED

ELN 131	Analog Electronics I	4 SHC			
ISC 129	Qual Testing Lab Tech	3 SHC			
MEC 110	Intro to CAD/CAM	2 SHC			
PCI 150	Process Control Systems	4 SHC			
Automation Engineering Technology					
*ATR 112	Intro to Automation	3 SHC			
ATR 121	Intro to Machine Vision	4 SHC			
*ATR 215	Sensors and Transducers	3 SHC			
*ELC 128	Intro to PLC	3 SHC			
ELN 133	Digital Electronics	4 SHC			
PCI 171	Fieldbus Systems	4 SHC			
*Basic Electricity					
<i>Choose one set:</i>					
ELC 131	Circuit Analysis I	4 SHC			
ELC 133	Circuit Analysis II	4 SHC			
<i>OR</i>					
ELC 138	DC Circuit Analysis	4 SHC			
ELC 139	AC Circuit Analysis	4 SHC			
Specialty					
<i>Choose one:</i>					
ATR 121	Intro to Machine Vision	4 SHC			
BAT 111	Building Automation Systems	2 SHC			
HYD 110	Hydraulics/Pneumatics I	3 SHC			
MEC 130	Mechanisms	3 SHC			
MNT 250	PLC Interfacing	4 SHC			
Mechatronics Engineering Technology					
*ATR 112	Intro to Automation	3 SHC			
*ELC 213	Instrumentation	4 SHC			
*Basic Electricity					
<i>Choose one course or set:</i>					
ELC 111	Intro to Electricity	3 SHC			
<i>OR</i>					
ELC 112	DC/AC Electricity	5 SHC			
<i>OR</i>					
ELC 131	Circuit Analysis I	4 SHC			
<i>OR</i>					
ELC 138	DC Circuit Analysis	4 SHC			
ELC 139	AC Circuit Analysis	4 SHC			
Drawing					
<i>Choose one:</i>					
DFT 119	Basic CAD	2 SHC			
DFT 151	CAD I	3 SHC			
DFT 154	Intro Solid Modeling	3 SHC			
DFT 170	Engineering Graphics	3 SHC			
EGR 120	Eng and Design Graphics	3 SHC			
ELC 132	Electrical Drawings	2 SHC			
Fluid Mechanics					
<i>Choose one:</i>					
HYD 110	Hydraulics/Pneumatics I	3 SHC			
HYD 180	Pneumatics in Automation	3 SHC			
MEC 265	Fluid Mechanics	3 SHC			
Mechanical Drives					
<i>Choose one:</i>					
MEC 130	Mechanisms	3 SHC			
MEC 275	Engineering Mechanisms	3 SHC			

Approved by the State Board of Community Colleges on August 16, 2012; Editorial Revision 09/08/12; Editorial Revision 12/14/12; CRC Revised—Electronic Only 05/29/13; Editorial Revision 08/21/13; Editorial Revision 01/17/14; Editorial Revision 10/16/14; SBCC Revised_____.

PROPOSED

Machines					
<i>Choose one course or set:</i>					
ELC 117	Motors and Controls	4 SHC			
ELC 130	Advanced Motors/Controls	3 SHC			
ELC 135	Electrical Machines I	3 SHC			
<i>AND</i>					
ELC 136	Electrical Machines II	4 SHC			
Programmable Logic Controllers (Choose one:)					
ELC 128	Intro to PLC	3 SHC			
ELN 260	Prog Logic Controllers	4 SHC			
*Physics (Choose one:)					
PHY 131	Physics-Mechanics	4 SHC			
PHY 151	College Physics I	4 SHC			

C. Other Major Hours. *To be selected from the following prefixes:*

AHR, ALT, ATR, BAT, BPM, BPR, BTB, BTC, BUS, CCT, CEG, CET, CHM, CIS, CIV, CMT, CSC, CTI, CTS, DBA, DDF, DEA, DFT, EGR, ELC, ELN, EPP, EPT, FBG, GRA, HET, HYD, HPC, ISC, LOG, MAC, MAT, MCM, MCO, MEC, MKT, MNT, MPS, MLG, MSM, NET, NOS, NUC, OMT, PCI, PHY, PKG, PMT, RCT, RVM, SEC, SST, TCT, TEL, TNE, TRN, WAT, WBL, WEB and WLD

Up to three semester hour credits may be selected from the following prefixes: ARA, ASL, CHI, FRE, GER, ITA, JPN, LAT, POR, RUS and SPA.

III. Other Required Hours

A college may include courses to meet graduation or local employer requirements in a certificate (0-1 SHC), diploma (0-4 SHC), or an associate in applied science (0-7 SHC) program. These curriculum courses shall be selected from the Combined Course Library and must be approved by the System Office prior to implementation. Restricted, unique, or free elective courses may not be included as other required hours.

IV. Employability Competencies

Fundamental competencies that address soft skills vital to employability, personal, and professional success are listed below. Colleges are encouraged to integrate these competencies into the curriculum by embedding appropriate student learning outcomes into one or more courses or through alternative methods.

- A. Interpersonal Skills and Teamwork** – The ability to work effectively with others, especially to analyze situations, establish priorities, and apply resources for solving problems or accomplishing tasks.
- B. Communication** – The ability to effectively exchange ideas and information with others through oral, written, or visual means.
- C. Integrity and Professionalism** – Workplace behaviors that relate to ethical standards, honesty, fairness, respect, responsibility, self-control, criticism and demeanor.
- D. Problem-solving** – The ability to identify problems and potential causes while developing and implementing practical action plans for solutions.
- E. Initiative and Dependability** – Workplace behaviors that relate to seeking out new responsibilities, establishing and meeting goals, completing tasks, following directions, complying with rules, and consistent reliability.
- F. Information processing** – The ability to acquire, evaluate, organize, manage, and interpret information.
- G. Adaptability and Lifelong Learning** – The ability to learn and apply new knowledge and skills and adapt to changing technologies, methods, processes, work environments, organizational structures and management practices.
- H. Entrepreneurship** – The knowledge and skills necessary to create opportunities and develop as an employee or self-employed business owner.

An **Employability Skills Resource Toolkit has been developed by NC-NET for the competencies listed above. Additional information is located at: <http://www.nc-net.info/employability.php>*

***The North Carolina Career Clusters Guide was developed by the North Carolina Department of Public Instruction and the North Carolina Community College system to link the academic and Career and Technical Education programs at the secondary and postsecondary levels to increase student achievement. Additional information about Career Clusters is located at: http://www.nc-net.info/NC_career_clusters_guide.php or <http://www.careertech.org>.*

Summary of Required Semester Hour Credits (SHC) for each credential:

	AAS	Diploma	Certificate
Minimum General Education Hours	15	6	0
Minimum Major Hours	49	30	12
Other Required Hours	0-7	0-4	0-1
Total Semester Hours Credit (SHC)	64-76	36-48	12-18

**Within the degree program, the institution shall include opportunities for the achievement of competence in reading, writing, oral communication, fundamental mathematical skills, and basic use of computers.*

*Approved by the State Board of Community Colleges on August 16, 2012; Editorial Revision 09/08/12; Editorial Revision 12/14/12; CRC Revised—Electronic Only 05/29/13; Editorial Revision 08/21/13; Editorial Revision 01/17/14; Editorial Revision 10/16/14; **SBCC** Revised _____.*

CURRICULUM STANDARD REVISION

College of The Albemarle
Aviation Systems Technology (A60200)

College of The Albemarle is seeking approval to revise the Aviation Systems Technology (A60200) curriculum standard, effective Summer 2015.

Proposed Revision:

From the core of the Aviation Systems Technology curriculum standard:

- Remove the Not Recommended (**NR**) from the *Diploma* column and replace it with **43-45 SHC**.
- Move the required core courses, except AVI 110 Aviation Maintenance-General, to the newly created Airframe and Powerplant subject areas.

In the footnote area designated with two asterisks (**):

- Change the reference on the curriculum standard signifying that the program is approved by the State Board Community Colleges to exceed the maximum allowable hours* for an applied science program to also indicate that the program may exceed the maximum allowable hours for a diploma program.

**ID SBCCC 400.95(d): On special approval by the State Board, a degree program title or a stand-alone diploma or certificate program title may exceed the maximum length of programs as set by the curriculum standards.*

Rationale of Requesting College: Employers have indicated interest in hiring individuals with a Federal Aviation Administration (FAA) endorsement in Airframe or Powerplant in addition to those individuals who possess both (A & P) credentials. All Airframe and Powerplant courses listed on the curriculum standard have a prerequisite of AVI 110 Aviation Maintenance-General and are designed to meet FAA requirements. In order to make a diploma program possible, while meeting FAA program requirements for Airframe or Powerplant credentials, it becomes necessary to exceed the maximum allowable diploma hours. The suggested revision would allow colleges the opportunity to award students with diploma credentials that have marketable employment value, yet are also stackable into the associate in science degree program.

Vote Results:

Colleges approved to offer the program: 4
Colleges in favor of the revision: 4

Coordinator: Frank Sculetta

PROPOSED CURRICULUM STANDARD

Effective Term
Fall 2001
[2001*03]
Summer 2015
2015*02

Curriculum Program Title	Aviation Systems Technology	Code	A60200
Concentration	(not applicable)		

Curriculum Description

The Aviation Systems Technology provides individuals with the knowledge and skills to qualify for an aircraft mechanic's certificate with airframe and/or powerplant ratings. The curriculum is approved by the Federal Aviation Administration (FAA) under 14 CFR Part 147, which governs aviation maintenance schools.

Course work includes aviation mathematics, FAA regulations, basic electricity, aircraft drawings; aircraft structures, systems, and components; aircraft engines, theory, systems, and components; and engine inspections and maintenance.

Employment opportunities exist as entry-level mechanics with air carriers, manufacturers, repair stations, fixed base operators, flight schools, and government aviation operations.

Curriculum Requirements*

[for associate degree, diploma, and certificate programs in accordance with 1D SBCCC 400.97(3)]

- I. General Education.** Degree programs must contain a minimum of 15 semester hours including at least one course from each of the following areas: humanities/fine arts, social/behavioral sciences, and natural sciences/mathematics. Degree programs must contain a minimum of 6 semester hours of communications. Diploma programs must contain a minimum of 6 semester hours of general education; 3 semester hours must be in communications. General education is optional in certificate programs.
- II. Major Hours.** AAS, diploma, and certificate programs must include courses which offer specific job knowledge and skills. Work-based learning may be included in associate in applied science degrees up to a maximum of 8 semester hours of credit; in diploma programs up to a maximum of 4 semester hours of credit; and in certificate programs up to a maximum of 2 semester hours of credit. *(See second page for additional information.)*
- III. Other Required Hours.** A college may include courses to meet graduation or local employer requirements in a certificate, diploma, or associate in applied science program. These curriculum courses shall be selected from the Combined Course Library and must be approved by the System Office prior to implementation. Restricted, unique, or free elective courses may not be included as other required hours.

	AAS	Diploma	Certificate
Minimum General Education Hours	15	6	0
Minimum Major Hours	73	30 43	12
Other Required Hours	0-3	0-4 0-1	0-1
Total Semester Hours Credit (SHC)	88-91**	36-48 49-52**	12-18

*Within the degree program, the institution shall include opportunities for the achievement of competence in reading, writing, oral communication, fundamental mathematical skills, and basic use of computers.

PROPOSED

Major Hours

[ref. 1D SBCCC 400.97 (3)]

- A. Core.** The subject/course core is comprised of subject areas and/or specific courses which are required for each curriculum program. A diploma program offered under an approved AAS program standard or a certificate which is the highest credential level awarded under an approved AAS program standard must include a minimum of 12 semester hours credit derived from the subject/course core of the AAS program.
- B. Concentration** (if applicable). A concentration of study must include a minimum of 12 semester hours credit from required subjects and/or courses. The majority of the course credit hours are unique to the concentration. The required subjects and/or courses that make up the concentration of study are in addition to the required subject/course core.
- C. Other Major Hours.** Other major hours must be selected from prefixes listed on the curriculum standard. A maximum of 9 semester hours of credit may be selected from any prefix listed, with the exception of prefixes listed in the core or concentration. Work-based learning may be included in associate in applied science degrees up to a maximum of 8 semester hours of credit; in diploma programs up to a maximum of 4 semester hours of credit; and in certificate programs up to a maximum of 2 semester hours of credit.

Aviation Systems Technology A60200**

	AAS	Diploma	Certificate
Minimum Major Hours Required	49 SHC	30 SHC	12 SHC
A. CORE Required Courses: AVI 110 Aviation Maintenance – General 15 SHC Required Subject Areas: <u>Both subject areas are required for the AAS Degree. The diploma requires the selection of one of the following subject areas (Airframe or Powerplant).</u> Airframe AVI 120 Airframe Maintenance I 12 SHC AVI 130 Airframe Maintenance II 9 SHC AVI 230 Airframe Maintenance III 7 SHC Powerplant AVI 240 Powerplant Maintenance I 6 SHC AVI 250 Powerplant Maintenance II 15 SHC AVI 260 Powerplant Maintenance III 9 SHC	73 SHC **	NR 43-45 SHC	Not Recommended (NR)
B. CONCENTRATION (Not applicable)	NA	NA	NA
C. OTHER MAJOR HOURS To be selected from the following prefixes: AVI, CIS, CSC and WBL Up to three semester hour credits may be selected from the following prefixes: ARA, ASL, CHI, FRE, GER, ITA, JPN, LAT, POR, RUS and SPA.	0-3 SHC	0	NR
D. OTHER REQUIRED HOURS	0-3 SHC	0-1	NR

** This program is approved by the State Board of Community Colleges to exceed maximum standard hours for an associate in applied science and diploma program. [ref. 1D SBCCC 400.95(d)].

CURRICULUM STANDARD REVISION

**Haywood Community College
Medical Assisting (A45400)**

Haywood Community College is seeking approval to revise the Medical Assisting (A45400) curriculum standard, effective Fall 2015.

Proposed Revisions

- Revise the curriculum description to remove the phrase “medical transcription”

Rationale: The Commission on Accreditation of Allied Health Education Programs (CAAHEP) has removed “medical transcription” as a required competency to be taught in the Medical Assisting curriculum. The change is related to the electronic technology utilized in health records.

Vote Results:

Colleges approved to offer the program:	41
Colleges in favor of the recommendations:	33
Colleges that did not respond:	8

Coordinator: Renee Batts

PROPOSED CURRICULUM STANDARD

<i>Effective Term</i>
Fall 2011
Fall 2015
[2011*03]
[2015*03]

Curriculum Program Title	Medical Assisting	Code	A45400
Concentration	(not applicable)		CIP Code:51.0801

Curriculum Description

The Medical Assisting curriculum prepares multi-skilled health care professionals qualified to perform administrative, clinical, and laboratory procedures.

Course work includes instruction in scheduling appointments, coding and processing insurance accounts, billing, collections, **medical transcription**, computer operations; assisting with examinations/treatments, performing routine laboratory procedures, electrocardiography, supervised medication administration; and ethical/legal issues associated with patient care.

Graduates of CAAHEP-accredited medical assisting programs may be eligible to sit for the American Association of Medical Assistants' Certification Examination to become Certified Medical Assistants. Employment opportunities include physicians' offices, health maintenance organizations, health departments, and hospitals.

*Curriculum Requirements**

[for associate degree, diploma, and certificate programs in accordance with 1D SBCCC 400.97 (3)]

- I. General Education.** Degree programs must contain a minimum of 15 semester hours including at least one course from each of the following areas: humanities/fine arts, social/behavioral sciences, and natural sciences/mathematics. Degree programs must contain a minimum of 6 semester hours of communications. Diploma programs must contain a minimum of 6 semester hours of general education; 3 semester hours must be in communications. General education is optional in certificate programs.
- II. Major Hours.** AAS, diploma, and certificate programs must include courses which offer specific job knowledge and skills. Work-based learning may be included in associate in applied science degrees up to a maximum of 8 semester hours of credit; in diploma programs up to a maximum of 4 semester hours of credit; and in certificate programs up to a maximum of 2 semester hours of credit. *(See second page for additional information.)*
- III. Other Required Hours.** A college may include courses to meet graduation or local employer requirements in a certificate, diploma, or associate in applied science program. These curriculum courses shall be selected from the Combined Course Library and must be approved by the System Office prior to implementation. Restricted, unique, or free elective courses may not be included as other required hours.

	AAS	Diploma	Certificate
Minimum General Education Hours	15	6	0
Minimum Major Hours	49	30	12
Other Required Hours	0-7	0-4	0-1
Total Semester Hours Credit (SHC)	64-76	36-48	12-18

**Within the degree program, the institution shall include opportunities for the achievement of competence in reading, writing, oral communication, fundamental mathematical skills, and basic use of computers.*

Proposed

Major Hours

[ref. 1D SBCCC 400.97 (3)]

- A. Core.** The subject/course core is comprised of subject areas and/or specific courses which are required for each curriculum program. A diploma program offered under an approved AAS program standard or a certificate which is the highest credential level awarded under an approved AAS program standard must include a minimum of 12 semester hours credit derived from the subject/course core of the AAS program.
- B. Concentration** (if applicable). A concentration of study must include a minimum of 12 semester hours credit from required subjects and/or courses. The majority of the course credit hours are unique to the concentration. The required subjects and/or courses that make up the concentration of study are in addition to the required subject/course core.
- C. Other Major Hours.** Other major hours must be selected from prefixes listed on the curriculum standard. A maximum of 9 semester hours of credit may be selected from any prefix listed, with the exception of prefixes listed in the core or concentration. Work-based learning may be included in associate in applied science degrees up to a maximum of 8 semester hours of credit; in diploma programs up to a maximum of 4 semester hours of credit; and in certificate programs up to a maximum of 2 semester hours of credit.

Medical Assisting A45400

	AAS	Diploma	Certificate
Minimum Major Hours Required	49 SHC	30 SHC	12 SHC
A. CORE <i>A diploma offered under this AAS degree requires a minimum of 12 SHC extracted from the required subject/course core of the AAS degree.</i> Required Courses: MED 110 Orientation to Medical Assisting 1 SHC MED 130 Administrative Office Procedures I 2 SHC MED 131 Administrative Office Procedures II 2 SHC MED 140 Exam Room Procedures I 5 SHC MED 150 Lab Procedures I 5 SHC MED 260 Medical Clinical Practicum 5 SHC Required Subject Areas: Anatomy & Physiology. Select one: BIO 160 Introductory Life Science 3 SHC BIO 161 Introduction to Human Biology 3 SHC BIO 163 Basic Anatomy & Physiology 5 SHC BIO 166 Anatomy and Physiology II 4 SHC BIO 169 Anatomy and Physiology II 4 SHC MED 116 Introduction to Anatomy & Physiology 4 SHC Medical/Legal Issues. Select one: MED 118 Medical Law and Ethics 2 SHC OST 149 Med Legal Issues 3 SHC Terminology. Select one sequence: MED 121 Medical Terminology I 3 SHC & MED 122 Medical Terminology II 3 SHC <i>or</i> OST 141 Medical Terminology I- Medical Office 3 SHC & OST 142 Medical Terminology II- Medical Office 3 SHC	31-34 SHC	12 SHC	
B. CONCENTRATION (Not applicable)			
C. OTHER MAJOR HOURS <i>To be selected from the following prefixes</i> ACC, BIO, BUS, CIS, CSC, CTS, HIT, HSC, MED, NUR, NUT, OST, SPA, and WBL <i>Up to three semester hour credits may be selected from the following prefixes: ARA, ASL, CHI, FRE, GER, ITA, JPN, LAT, POR, RUS and SPA.</i>			

CURRICULUM STANDARD REVISION

**Lenoir Community College
Therapeutic Massage (A45750)**

Lenoir Community College is seeking approval to revise the Therapeutic Massage (A45750) curriculum standard, effective Fall 2015.

Proposed Revisions

- Revise the curriculum description to reflect the Massage and Bodywork Licensing Exam (MBLEX) as the sole license examination for the profession.

Rationale: Effective February 1, 2015, the National Certification for Therapeutic Massage and Bodywork will no longer offer the massage licensing exam. The change in the curriculum description will accurately reflect that the Massage and Bodywork Licensing Exam (MBLEX) is the license exam for graduates.

Vote Results:

Colleges approved to offer the program:	16
Colleges in favor of the recommendations:	8
College that declined to vote	1
Colleges that did not respond:	7

Coordinator: Renee Batts

PROPOSED CURRICULUM STANDARD

<i>Effective Term</i>
Summer 2013
Fall 2015
[2013*02]
[2015*03]

Curriculum Program Title	Therapeutic Massage	Program Code	A45750
Concentration	(not applicable)	CIP Code:	51.3501

Curriculum Description

The Therapeutic Massage curriculum prepares graduates to work in direct client care settings to provide manipulation, methodical pressure, friction and kneading of the body for maintaining wellness or treating alterations in wellness throughout the lifespan.

Courses will include content in normal human anatomy and physiology, therapeutic massage, ethical/legal issues, business practices, nutrition and psychology.

Employment opportunities include hospitals/rehabilitation centers, health departments, home health, medical offices, nursing homes, spas/health/sports clubs, and private practice. Graduates may be eligible to take the Massage and Bodywork Licensing Exam. ~~or the National Certification for Therapeutic Massage and Bodywork.~~

*Curriculum Requirements**

[for associate degree, diploma, and certificate programs in accordance with 1D SBCCC 400.97 (3)]

- I. General Education.** Degree programs must contain a minimum of 15 semester hours including at least one course from each of the following areas: humanities/fine arts, social/behavioral sciences, and natural sciences/mathematics. Degree programs must contain a minimum of 6 semester hours of communications. Diploma programs must contain a minimum of 6 semester hours of general education; 3 semester hours must be in communications. General education is optional in certificate programs.
- II. Major Hours.** AAS, diploma, and certificate programs must include courses which offer specific job knowledge and skills. Work-based learning may be included in associate in applied science degrees up to a maximum of 8 semester hours of credit; in diploma programs up to a maximum of 4 semester hours of credit; and in certificate programs up to a maximum of 2 semester hours of credit. *(See second page for additional information.)*
- III. Other Required Hours.** A college may include courses to meet graduation or local employer requirements in a certificate, diploma, or associate in applied science program. These curriculum courses shall be selected from the Combined Course Library and must be approved by the System Office prior to implementation. Restricted, unique, or free elective courses may not be included as other required hours.

	AAS	Diploma	Certificate
Minimum General Education Hours	15	6	0
Minimum Major Hours	49	30	12
Other Required Hours	0-7	0-4	0-1
Total Semester Hours Credit (SHC)	64-76	36-48	12-18

**Within the degree program, the institution shall include opportunities for the achievement of competence in reading, writing, oral communication, fundamental mathematical skills, and basic use of computers.*

Proposed

Major Hours

[ref. 1D SBCCC 400.97 (3)]

- A. Core.** The subject/course core is comprised of subject areas and/or specific courses which are required for each curriculum program. A diploma program offered under an approved AAS program standard or a certificate which is the highest credential level awarded under an approved AAS program standard must include a minimum of 12 semester hours credit derived from the subject/course core of the AAS program.
- B. Concentration** (if applicable). A concentration of study must include a minimum of 12 semester hours credit from required subjects and/or courses. The majority of the course credit hours are unique to the concentration. The required subjects and/or courses that make up the concentration of study are in addition to the required subject/course core.
- C. Other Major Hours.** Other major hours must be selected from prefixes listed on the curriculum standard. A maximum of 9 semester hours of credit may be selected from any prefix listed, with the exception of prefixes listed in the core or concentration. Work-based learning may be included in associate in applied science degrees up to a maximum of 8 semester hours of credit; in diploma programs up to a maximum of 4 semester hours of credit; and in certificate programs up to a maximum of 2 semester hours of credit.

Therapeutic Massage (A45750)

	AAS	Diploma	Certificate																																								
Minimum Major Hours Required	49 SHC	30 SHC	12 SHC																																								
A. CORE <i>Courses required for the diploma are designated with *</i> Required Courses: <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 10%;">BIO</td> <td style="width: 10%;">271</td> <td style="width: 70%;">Pathophysiology</td> <td style="width: 10%; text-align: right;">3 SHC</td> </tr> <tr> <td>*</td> <td>MTH</td> <td>110 Fundamentals of Massage</td> <td style="text-align: right;">10 SHC</td> </tr> <tr> <td>*</td> <td>MTH</td> <td>120 Ther Massage Applications</td> <td style="text-align: right;">10 SHC</td> </tr> <tr> <td>*</td> <td>MTH</td> <td>125 Ethics of Massage</td> <td style="text-align: right;">2 SHC</td> </tr> <tr> <td></td> <td>MTH</td> <td>130 Therapeutic Massage Mgmt</td> <td style="text-align: right;">2 SHC</td> </tr> <tr> <td></td> <td>MTH</td> <td>210 Adv Skills of Massage</td> <td style="text-align: right;">8 SHC</td> </tr> <tr> <td></td> <td>MTH</td> <td>220 Outcome-Based Massage</td> <td style="text-align: right;">7 SHC</td> </tr> </table> Required Subject Areas: Psychology/Human Relations. <i>Select one.</i> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 10%;">BUS</td> <td style="width: 10%;">152</td> <td style="width: 70%;">Human Relations</td> <td style="width: 10%; text-align: right;">3 SHC</td> </tr> <tr> <td></td> <td>PSY</td> <td>118 Interpersonal Psychology</td> <td style="text-align: right;">3 SHC</td> </tr> <tr> <td></td> <td>PSY</td> <td>150 General Psychology</td> <td style="text-align: right;">3 SHC</td> </tr> </table>	BIO	271	Pathophysiology	3 SHC	*	MTH	110 Fundamentals of Massage	10 SHC	*	MTH	120 Ther Massage Applications	10 SHC	*	MTH	125 Ethics of Massage	2 SHC		MTH	130 Therapeutic Massage Mgmt	2 SHC		MTH	210 Adv Skills of Massage	8 SHC		MTH	220 Outcome-Based Massage	7 SHC	BUS	152	Human Relations	3 SHC		PSY	118 Interpersonal Psychology	3 SHC		PSY	150 General Psychology	3 SHC	45 SHC	22 SHC	
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