# STATE BOARD OF COMMUNITY COLLEGES

## CURRICULUM STANDARD
### (New to the System)

The State Board of Community Colleges is asked to approve the curriculum standard listed below.


NC Community College System Office Staff
Health Science: Therapeutic and Diagnostic Services (Diploma) (D45xxx)


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**STATE BOARD OF COMMUNITY COLLEGES**
**Health Science: Therapeutic and Diagnostic Services (Diploma) (D45xxx)**

**Request:** At the request of staff, the State Board of Community Colleges is asked to approve the following new curriculum standard:

Health Science: Therapeutic and Diagnostic Services (D45xxx)

**Background:** Colleges are currently coding pre-health students as Associate in General Education (AGE) (A10300), General Occupational Technology (GOT) (A55280) or using a health science code with an additional, local suffix.

1.  The AGE is designed for individuals to broaden their education with an emphasis on personal interest, growth, and development. Diplomas and certificates are not allowed in the AGE program. The AGE does not qualify for Perkin's funding since it does not lead to a creditable workforce credential. Fifty-five of the fifty-eight colleges are approved to offer the AGE program.

2.  The GOT program provides the opportunity for an individual to upgrade their skills and knowledge. Students may earn an associate, diploma or certificate utilizing an individualized program of study. The GOT program does not qualify for Perkin's funding since it does not lead to a creditable workforce credential. Fifty-four of the fifty-eight colleges are approved to offer the GOT.

3.  Colleges that utilize a local suffix for pre-health students (example: A45110A) are able to distinguish those students from students accepted/enrolled in their primary program of study. However, Colleague software does not capture the local seventh digit in the enrollment data received in the System Office data warehouse which makes it difficult to capture accurate data.

**Rationale:** The proposed standard consists of general education courses (biology, psychology, critical thinking, and mathematics) that provide a foundation for success in nursing and the allied health programs. Additional non-general education courses include a technical core (orientation to the health sciences, medical terminology, CPR, etc.) that are foundational to the six program majors: Emergency Medical Science, Medical Assisting, Nursing Assistant, Pharmacy Technology, Phlebotomy, and Therapeutic Massage. The proposed standard will, therefore, strengthen the applicant pool and increase the individual's success/completion rate in Health Science programs.

The Health Science Curriculum Standard will also provide the following:

1.  a pre-health science code so accurate data can be captured on pre-health science students,
2.  an additional Career and College Promise pathway option for high school students interested in entering one of the health science programs within the community college system,
3.  a technical core and career pathway that would provide the graduate with the skills needed for an entry-level job in health care, and
4.  six program majors which will qualify for Perkins funding since they lead to a creditable workforce credential.

The Health Science: Therapeutic and Diagnostic Services standard would be available for colleges to utilize in coding and advising pre-health students.  In order to utilize one of the six program majors: Emergency Medical Science, Medical Assisting, Nursing Assistant, Pharmacy Technology, Phlebotomy, and Therapeutic Massage, the college must have approval to offer the primary curriculum program and file an electronic program of study (POS).

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## Curriculum Standard for Health Science: Therapeutic and Diagnostic Services

**Career Cluster:** Health Science **

**Cluster Description:** Planning, managing, and providing therapeutic services, diagnostic services, health informatics, support services, and biotechnology research and development.

| **Pathway:** Therapeutic and Diagnostic Services | **Effective Term** Fall 2014 |
|---|---|

### Program Majors Under Pathway

| Program Major / Classification of Instruction Programs (CIP) Code | | Credential Level(s) Offered | Program Major Code |
|---|---|---|---|
| Emergency Medical Science | CIP Code   51.0904 | Diploma/Certificate | D45XXX |
| Medical Assisting | CIP Code   51.0801 | Diploma/Certificate | D45XXX |
| Nursing Assistant | CIP Code   51.3902 | Diploma/Certificate | D45XXX |
| Pharmacy Technology | CIP Code   51.0805 | Diploma/Certificate | D45XXX |
| Phlebotomy | CIP Code   51.1009 | Diploma/Certificate | D45XXX |
| Therapeutic Massage | CIP Code   51.3501 | Diploma/Certificate | D45XXX |

## Pathway Description:

This curriculum is designed to prepare students for careers in the Health Sciences.

Students will complete general education courses that provide a foundation for success in nursing and allied health curricula.  Students may select a career pathway that will prepare them for an entry level position in health care.  Courses may also provide foundational knowledge needed in the pursuit of advanced health science degrees or programs.

Graduates should qualify for an entry-level job associated with the program major such as Emergency Medical Technician (EMT) or Advanced Emergency Medical Technician (AEMT), Medical Assistant, Nursing Assistant, Pharmacy Technician, Phlebotomist, or Massage Therapist dependent upon the selected program major.

*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:***

***In order to utilize one of the program majors below, the college must have approval to offer the primary curriculum program and file an electronic program of study (POS).  (Example: A college must have approval for Medical Assisting (A45400) in order to file a POS for Medical Assisting (D45XXX)).***

**Emergency Medical Science**: A program that prepares graduates to enter the workforce as Emergency Medical Technicians or Advanced Emergency Medical Technicians.  The course of study provides the student an opportunity to acquire basic life support knowledge and skills by utilizing classroom instruction, practical laboratory sessions, and hospital/field internships.  Students progressing through the program may be eligible to apply for both state and national certification exams.  Employment opportunities include ambulance services, fire and rescue agencies, air medical services, specialty areas of hospitals, industry, educational institutions, and government agencies.

**Medical Assisting:** A program that prepares multi-skilled health care professionals qualified to perform administrative, clinical, and laboratory procedures.  Course work includes instruction in scheduling appointments, medical records, introductory insurance procedures, computer operations; assisting with examinations/treatments, performing routine laboratory procedures, electrocardiography, and supervised medication administration.  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.

**Nursing Assistant:** A program that prepares individuals to work under the supervision of licensed health care professionals in performing nursing care and services for persons of all ages. Course work emphasizes growth and development throughout the life span, personal care, vital signs, communication, nutrition, medical asepsis, therapeutic activities, accident and fire safety, household environment and equipment management; family resources and services; and employment skills. Graduates of this program may be eligible to be listed on the Division of Health Service Regulation (DHSR) Nurse Aide registry as a Nursing Assistant I and the N.C. Board of Nursing Nurse Aide II registry as a Nursing Assistant II. They may be employed in home health agencies, hospitals, clinics, nursing homes, extended care facilities, and doctors' offices.

**Pharmacy Technology:** A program that prepares individuals to assist the pharmacist in duties that a technician can legally perform and to function within the boundaries prescribed by the pharmacist and the employment agency. Course work includes preparing prescription medications, mixing intravenous solutions and other specialized medications, maintaining inventories, and packaging medications in unit-dose or med-card form. Employment opportunities include retail, hospitals, nursing homes, research laboratories, wholesale drug companies, and pharmaceutical manufacturing facilities. Graduates from the program may be eligible to take the National Certification Examination to become a certified pharmacy technician.

**Phlebotomy:** A program that prepares individuals to obtain blood and other specimens for the purpose of laboratory analysis. Course work includes proper specimen collection and handling, communication skills, and maintaining patient data. Graduates may qualify for employment in hospitals, clinics, physicians' offices, and other health care settings and may be eligible for national certification as phlebotomy technicians.

**Therapeutic Massage:** A program that 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 work includes content in normal human anatomy and physiology, therapeutic massage, and ethical/legal issues. 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.

**I. General Education Academic Core**
[*Curriculum Requirements for associate degree, diploma, and certificate programs in accordance with 1 D 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.*

## Health Science: Therapeutic and Diagnostic Services

| Recommended General Education Academic Core | AAS | Diploma | Certificate |
|---|---|---|---|
| **Minimum General Education Hours Required:** | | **6 SHC** | |

*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.*

**Communication:**

| | | | |
|---|---|---|---|
| ENG | 111 | Expository Writing | 3 SHC |
| ENG | 112 | Argument-Based Research | 3 SHC |
| COM | 120 | Intro Interpersonal Com | 3 SHC |
| COM | 231 | Public Speaking | 3 SHC |

Diploma: **3-6+ SHC**

**Humanities/Fine Arts:**

| | | | |
|---|---|---|---|
| HUM | 115 | Critical Thinking | 3 SHC |
| PHI | 230 | Introduction to Logic | 3 SHC |
| PHI | 240 | Introduction to Ethics | 3 SHC |

Diploma: **0-3+ SHC**

**Social /Behavioral Sciences:**

| | | | |
|---|---|---|---|
| *PSY | 150 | General Psychology | 3 SHC |
| PSY | 241 | Developmental Psy | 3 SHC |

Diploma: **0-3+ SHC**

**Natural Sciences/Mathematics:**

| | | | |
|---|---|---|---|
| BIO | 165 | Anatomy & Physiology I | 4 SHC |
| BIO | 166 | Anatomy & Physiology II | 4 SHC |
| BIO | 168 | Anatomy & Physiology I | 4 SHC |
| BIO | 169 | Anatomy & Physiology II | 4 SHC |
| BIO | 163 | Basic Anatomy & Physiology | 5 SHC |
| BIO | 175 | General Microbiology | 3 SHC |
| BIO | 275 | Microbiology | 4 SHC |
| CHM | 131 | Introduction to Chemistry | 3 SHC |
| CHM | 131A | Introduction to Chemistry Lab | 1 SHC |
| MAT | 110 | Mathematical Measurement & Literacy | 3 SHC |
| MAT | 143 | Quantitative Literacy (proposed new course) | 3 SHC |
| PHY | 110 | Conceptual Physics | 3 SHC |
| PHY | 110A | Conceptual Physics Lab | 1 SHC |

Diploma: **0-3+ SHC**

*Highlighted changes above pending Fall CRC approval*

*\*Please note PSY 150 General Psychology is a required core course for the Phlebotomy Pathway.*

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**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.

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**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.

| Health Science: Therapeutic and Diagnostic Services | AAS | Diploma | Certificate |
|---|---|---|---|
| **Minimum Major Hours Required:** | | **30 SHC** | |

**A. Technical Core: (3-8 SHC)**

| | | |
|---|---|---|
| MED 120 Survey of Medical Terminology | 2 SHC | or |
| MED 121 Medical Terminology I | 3 SHC | & |
| MED 122 Medical Terminology II | 3 SHC | |
| MED 180 CPR Certification | 1 SHC | or |
| HSC 120 CPR | 1 SHC | or |
| HEA 112 First Aid & CPR | 2 SHC | or |
| HSC 110 Orientation to Health Careers | 1 SHC | or |
| HSC 140 Transcultural Healthcare | 2 SHC | |

**B. Program Major(s): (12-22 SHC)** *(Select one Program Major)*

**Emergency Medical Science (16 SHC)**

| | |
|---|---|
| EMS 110 EMT ~~Basic~~ | ~~7~~ 8 SHC |
| EMS 120 ~~Intermediate Interventions~~ Advanced EMT | ~~3~~ 6 SHC |
| EMS 121 ~~EMS~~ AEMT Clinical Practicum | 2 SHC |

*Highlighted changes above pending Fall CRC approval*

**Medical Assisting (22 SHC)**

| | |
|---|---|
| MED 110 Orientation to Medical Assisting | 1 SHC |
| MED 118 Medical Law and Ethics | 2 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 |

**Nursing Assistant (14 SHC)**

| | |
|---|---|
| NAS 101 Nursing Assistant I | 6 SHC |
| NAS 102 Nursing Assistant II | 6 SHC |
| NAS 103 Home Health Care | 2 SHC |

**Pharmacy Technology(19 SHC)**

| | |
|---|---|
| PHM 110 Introduction to Pharmacy | 3 SHC |
| PHM 111 Pharmacy Practice I | 4 SHC |
| PHM 115 Pharmacy Calculations | 3 SHC |
| PHM 118 Sterile Procedures | 4 SHC |
| PHM 120 Pharmacology I | 3 SHC |
| PHM 140 Trends in Pharmacy | 2 SHC |

**Phlebotomy (12 SHC)**

| | |
|---|---|
| PBT 100 Phlebotomy Technology | 6 SHC |
| PBT 101 Phlebotomy Practicum | 3 SHC |
| PSY 150 General Psychology | 3 SHC |

**Therapeutic Massage (22 SHC)**

| | |
|---|---|
| MTH 110 Fundamentals of Massage | 10 SHC |
| MTH 120 Ther Massage Applications | 10 SHC |
| MTH 125 Ethics of Massage | 2 SHC |

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| **C. Other Major Hours.** |
|---|
| **To be selected from the following prefixes:** |
| BIO, CHM, CIS, EMS, HEA, HSC, MAT, MED, MTH, NAS, NUT, PBT, PHM, PHY, PSY, SOC, 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.* |

**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** |

*Approved by the State Board of Community Colleges on _____.*