

STATE BOARD OF COMMUNITY COLLEGES
Curriculum Program Application
(New to the System)

The State Board of Community Colleges is asked to approve the curriculum program at the listed college on the condition that equipment funds are available to the college and operating funds generated by the budget formula will permit the offering of the program without any special allocation of funds.

Durham Technical Community College
Orthopaedic Technology (A45xxx)

Contact(s):

Dr. Lisa Eads
Director

**PROGRAM APPLICATION
SUMMARY EVALUATION REPORT
Durham Technical Community College
Orthopaedic Technology (A45xxx)**

Program Planning: Durham Technical Community College is seeking approval for a new program, Orthopaedic Technology, to begin Fall 2020. The planning area is defined as the college's service area of Durham and Orange Counties. All colleges were notified of the planning process for this program.

The proposed program was approved by the Board of Trustees at Durham Technical Community College on October 8, 2019. Minutes from this Board meeting were attached to the program application. The President and the Board of Trustees of Durham Technical Community College have certified the following:

- The proposed program will enhance the workforce of North Carolina, will provide educational and training opportunities consistent with the mission of the college, and will not duplicate the opportunities currently offered.
- They have assessed the need for the proposed program and the resources required to maintain a viable program and certify that the college can operate the proposed program efficiently and effectively within the resources available to the college.
- The college will complete a program accountability report including student success measures, enrollment trends, completion rates, and employment data three years after implementation of the program.

Program Rationale: Durham Technical Community College (DTCC) indicates the following:

- Durham Technical Community College, in collaboration with the University of North Carolina Health Care Department of Orthopaedics, has developed a new Orthopaedic Technology program to meet the growing need for this vital member of the orthopaedic care team. The team consists of orthopaedic surgeon, nurses, administrative staff and orthopaedic technologists. An Orthopaedic Technologist is a specialized allied health professional who assists the surgeons in the care of patients.
- The Orthopaedic Technologist is an expert in plaster and synthetic casting techniques and application. Orthopaedic Technologists are skilled at removing casts and properly applying traction detecting deficiencies in procedures and supplies as well as making indicated adjustments in casts. Orthopaedic Technologists also assist the surgeon in the operating room.
- Orthopaedic Technologists adjust canes, crutches and walkers as well as provide educational instruction on the use of assistive orthopaedic devices.
- Durham Technical Community College was approached by UNC Department of Orthopaedics representatives to develop a program to meet the projected need for trained and certified Orthopaedic technologists. A needs assessment was conducted with local hospitals including Duke, UNC and Wake Med that showed a need for at least 10 orthopaedic technologists per

year to meet the need of clinic and surgical centers. This will be the first program of its kind in North Carolina and surrounding states.

- UNC specifically stressed the importance of trained and certified staff to increase the value of care. Currently, UNC is in need of 20 orthopaedic technologists and wished to prepare current ortho techs for certification.
- The Bureau of Labor Statistics recognizes this as an emerging field and predicts a 11-20% growth in job opportunities by 2026. The mean national salary is \$36,690 to \$42,000 per year, with UNC Hospitals reporting salaries of \$32,000 to \$48,000 per year.

Impact of the Proposed Program on Other Programs: No community colleges are approved to offer the Orthopaedic Technology program. Being a new program, **no impact assessments were required.**

Implementation of Collaborative Plan: Not Applicable

Curriculum Design: The proposed program of study is presented to the State Board for approval. The curriculum standard and courses will be presented for information at the CCRC per protocol.

Curriculum Description as Designated on Curriculum Standard

The Orthopaedic Technology program prepares individuals for employment in clinical and surgical settings assisting the orthopaedic team. Students completing the curriculum will be eligible to sit for the Orthopedic Technology certification examination. This program also provides necessary background for the supplemental certification.

Students will become proficient in plaster and synthetic casting techniques and applications, removing casts properly applying traction, detect deficiencies in the procedure and supplies, make indicated adjustments for casts, and assist the orthopaedic surgeon in the OR.

Employment opportunities are available in a variety of clinical settings including orthopaedic clinics, hospitals, independent surgical centers, and ambulatory care settings.

Contact(s):

Dr. Lori Byrd
Associate Director

Proposed Curriculum Standard

Program Title: Orthopaedic Technology Program Code: A45XXX

Concentration Title (if applicable): _____

Effective Term: X Fall, Summer or Spring of 2020. (Year)

Curriculum Description Complete this section using three paragraphs which define intent, content and graduate qualifications. Paragraphs are limited to three sentences with a maximum of 40 words for the paragraph

The Orthopaedic Technology program prepares individuals for employment in clinical and surgical settings assisting the orthopaedic team. Students completing the curriculum will be eligible to sit for the Orthopedic Technology certification examination. This program also provides necessary background for the supplemental certification.

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Curriculum Requirements*

[for associate degree, diploma, and certificate programs in accordance with 1D SBCCC 400.10]

- 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 in Program	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.*

Major Hours

- 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 of 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.

Curriculum Title/Curriculum Code

	AAS	Diploma	Certificate
Minimum Major Hours Required	49 SHC	30 SHC	12 SHC
A. CORE			
Required Courses: <i>(List required course titles/hours. Use an * to identify courses that are required for a diploma if applicable.)</i>	48 SHC	30	12
OTC 110 Intro to Orthopaedic Technology 3 SHC			
OTC 112 General Patient Care 3 SHC			
OTC 115 Ortho Anatomy and Physiology 3 SHC			
OTC 120 Basic Radiologic Concepts 3 SHC			
OTC 210 Ortho Equipment 3 SHC			
OTC 215 Casting and Splinting I 3 SHC			
OTC 212 Physical Assessment 3 SHC			
OTC 220 Custom Bracing 3 SHC			
OTC 225 Casting and Splinting II 3 SHC			
OTC 280 Professional Practice 3 SHC			
Clinical Education			
OTC 150 Clinical Practice I 5 SHC			
OTC 250 Clinical Practice II 5 SHC			
OTC 260 Clinical Practice III 8 SHC			
Required Subject Areas: <i>(List subject areas if applicable.)</i>			

B. CONCENTRATION <i>(list concentration courses if applicable)</i>			
C. OTHER MAJOR HOURS <i>To be selected from the following prefixes: (List appropriate course prefixes. Core prefixes should be included.)</i> BIO, BUS, CHM, HIT, HSC, MED, OST, PHM, PSY, and WBL <i>Up to two semester hour credits may be selected from ACA.</i> <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>			

Proposed Orthopaedic Technology (OTC) Courses

*Effective Term – Fall 2020 [2020*03]*

Core Courses

OTC 110 Intro to Orthopaedic Technology

Class 3 Lab 0 Clinical 0 Work 0 Credit 3

This course introduces the different roles in the Orthopaedic Care Team, specifically the scope of practice and specific duties of the Orthopaedic Technologist. Topics include role of the Orthopaedic Technologist, scope of practice, standards of patient care, introduction to basic equipment and monitors, and types of splinting and casting. Upon completion, the student should be able to describe the roles and functions of the members of the orthopaedic care team, and have a basic knowledge of orthopaedics and its associated equipment.

OTC 112 General Patient Care

Class 2 Lab 2 Clinical 0 Work 0 Credit 3

This course introduces patient care in an orthopaedic environment. Topics include communication skills, orthopaedic terminology and abbreviations, medication fundamentals critical to orthopaedics, OSHA standards, patient safety, patient transfers, and patient education. Upon completion, students should be able to describe the fundamentals of orthopedic patient care, as well as perform basic procedures such as obtaining vital signs and wound care.

OTC 115 Ortho Anatomy and Physiology

Class 3 Lab 0 Clinical 0 Work 0 Credit 3

This course introduces the anatomy and physiology of the musculoskeletal system and related structures. Topics include structural make-up, group composition, relationships, and location of each bone. Upon completion, students should be able to describe musculoskeletal anatomy and the basic physiology and pathology of injury and disease.

OTC 120 Basic Radiologic Concepts

Class 2 Lab 2 Clinical 0 Work 0 Credit 3

This course introduces viewing and interpreting radiographic images, including viewing images,

terminology, and discussing fractures with colleagues. Topics include viewing and interpretation of plain orthopaedic radiographs, MRI's, and other types of permanent imaging relating to orthopaedics, terminology relating directly to the skeletal system and fracture healing, and describing a fracture as it relates to the radiographic image. Upon completion, students should be able to interpret orthopaedic radiographic images.

OTC 210 Ortho Equipment

Class 2 Lab 3 Clinical 0 Work 0 Credit 3

This course provides the basic principles of orthopedic equipment, including complications and contraindications. Topics include halo for skull fixation, external fixator devices, specialty surgical implants, different types of traction, traction set-up and application, operating room equipment, wound VAC devices, bone stimulators, fluoroscopy machines, and ultrasound imaging. Upon completion, students should be able to recognize and demonstrate basic principles of use for orthopedic equipment.

OTC 212 Physical Assessment

Class 2 Lab 2 Clinical 0 Work 0 Credit 3

This course introduces a comprehensive overview of knowledge, terminology, and application used for orthopaedic patient physical assessment. Topics include life span differences, assessment of acute and chronic patient orthopaedic problems, the application and use of various orthopaedic devices, and how to do custom measurements. Upon completion, students should be able to assess a patient's orthopaedic condition and identify the best orthopaedic device, considering the potential complications and contraindications.

OTC 215 Casting and Splinting I

Class 2 Lab 3 Clinical 0 Work 0 Credit 3

This course is designed to introduce the basics of cast material selection, casting techniques, cast removal, and properly fitting patients for external aid devices. Emphasis is placed on anatomy specific to orthopaedic issues, types and functions of different types of casts, proper material selection, basic casting application skills, safe cast removal, use of external aide devices, and providing patient instructions for at-home care. Upon completion, students should be able to identify the best type of cast for different orthopedic issues, describe the anatomy specifically related to casting and splinting, apply a basic cast, provide patients with proper at-home care instructions, and be able to safely remove a cast.

OTC 220 Custom Bracing

Class 2 Lab 3 Clinical 0 Work 0 Credit 3

This course is designed to prepare individuals to properly apply a customized brace to a patient based on a specific medical diagnosis. Emphasis is placed on custom brace fitting techniques and measurements, matching the correct brace to the medical diagnosis, how to avoid brace complications, identification of contraindications, and medical coding and reimbursement related to bracing. Upon completion, students should be able to apply a customized brace to a patient based on the medical diagnosis, and instruct patient on at-home brace care.

OTC 225 Casting and Splinting II

Class 2 Lab 3 Clinical 0 Work 0 Credit 3

This course is designed to build upon basic casting techniques and knowledge. Topics include advanced casting techniques such as windowing of a cast, protecting pins and external hardware, pin care, and wound care. Upon completion, students should be able to independently window a cast, apply a cast while protecting pins and external hardware, instruct patient on proper pin care, and provide wound care to a casted area.

OTC 280 Professional Practice

Class 3 Lab 0 Clinical 0 Work 0 Credit 3

This course covers practical considerations of entering the workforce as an orthopedic technologist, including job search skills, and review and preparation to sit for the national licensure exam in orthopaedic technology. Emphasis should be placed on resume building, interview skills, as well as locating suitable practice locations for a student's interests and career. Upon completion, students are eligible to apply for the licensure exam and obtain employment as an orthopaedic technologist.

Core Clinical Education

OTC 150 Clinical Practice I

Class 0 Lab 0 Clinical 15 Work 0 Credit 5

This course provides a concentrated clinical experience in an orthopaedic office or hospital setting. Emphasis is placed on the graduated responsibility of the trainee, with progression towards independent performance of tasks. Upon completion, students should be able to

incorporate their new orthopaedic technologist skills into a clinical practice scenario.

OTC 250 Clinical Practice II

Class 0 Lab 0 Clinical 15 Work 0 Credit 5

This course is designed to provide a concentrated clinical experience in an orthopaedic healthcare setting. Students will apply advanced orthopaedic technology knowledge and skills on real-world patients. Emphasis is placed on transferring the skills from the classroom and laboratory settings and applying them to real orthopaedic patients while gaining autonomy in knowledge and skills and under the direct supervision of an orthopaedic clinical supervisors and orthopaedic provider. Upon completion, students should be able to perform intermediate level orthopaedic technologist duties while under the supervision on the orthopaedic clinical supervisor.

OTC 260 Clinical Practice III

Class 0 Lab 0 Clinical 24 Work 0 Credit 8

This course is designed to facilitate application of advanced course concepts and skills in an orthopaedic healthcare setting. Emphasis is placed on transferring the skills from the classroom and laboratory settings and applying them to real orthopaedic patients while gaining autonomy in their skills and under the direct supervision of an orthopaedic clinical supervisors and orthopaedic provider. Upon completion, students should be able to perform professional level orthopaedic technologist duties while under the supervision on the orthopaedic clinical supervisor.

STATE BOARD OF COMMUNITY COLLEGES
New Curriculum Prefix -
Tiered Funding Formula Recommendations

The State Board of Community Colleges is asked to assign the following new curriculum prefix to the North Carolina Community College System Tiered Funding Formula:

Tier 1A

OTC – Orthopaedic Technology

Rationale: The OTC curriculum prefix is in the area of health care. Individuals enrolled in OTC courses will be able to seek employment in clinical and surgical settings assisting the orthopaedic team. Students completing the curriculum will also be eligible to sit for the Orthopedic Technology certification examination.

Background:

On August 15, 2014, the State Board of Community Colleges adopted the 2014-2015 State Aid Allocations and Budget Policies, which included the implementation of a four-tiered funding model. To implement the Tiered Funding Forming Model, all existing curriculum and continuing education course prefixes were assigned to one of four funding levels as defined below:

Tier 1A: Includes curriculum budget FTE in health care and technical education courses that train North Carolinians for immediate employment in priority occupations that have documented skills gaps and pay higher wages. This tier also includes FTE in a limited number of continuing education courses that train students for the exact same third-party certification as curriculum courses in Tier 1A.

Tier 1B: Includes curriculum budget FTE in other high cost areas of health care, technical education, lab-based science, and college-level math courses. With the implementation of Closing the Skills Gap, Tier 1B also includes FTE in short-term, workforce continuing education courses that help prepare students for jobs in priority occupations and lead to competency-based industry credentials.

Tier 2: Includes

- a) all other curriculum budget FTE,
- b) all Basic Skills budget FTE, and
- c) budget FTE associated with other continuing education courses that are scheduled for 96 hours or more and are mapped to a third-party credential, certification, or industry-designed curriculum.

Tier 3: Includes all other continuing education budget FTE. This weighted allocation model is designed to provide a funding differential between each tier. Tier 1A is funded at a level equal to 30% higher than Tier 2, while Tier 1B is funded at a level that is 15% higher than Tier 2. Tier 3 is funded at a rate that is 15% less than Tier 2.

Contact(s):

Lisa Eads
Director