



NORTH CAROLINA COMMUNITY COLLEGE SYSTEM
Dr. R. Scott Ralls, President

January 23, 2012

MEMORANDUM

TO: Presidents
Chief Academic Officers

FROM: Sharon E. Morrissey
Senior Vice President and Chief Academic Officer

SUBJECT: State Board Action on January 20, 2012
Curriculum Standard Revision

On January 20, 2012, the State Board of Community Colleges approved the requested revisions to the following curriculum standards:

Medical Dosimetry (Diploma) (D45450)
Applied Engineering Technology (A40130)

Please be aware that you must implement the revised standards no later than one year after the effective term. You must update your college's electronic programs of study and receive approval from the System Office prior to implementation of the revised programs.

If you have any questions concerning the State Board action item, please contact Ms. Jennifer Frazelle at 919.807.7120 or frazellej@nccommunitycolleges.edu. The revised standards are attached for your convenience. You may view all curriculum standards and courses by visiting the Programs website at:

<http://www.nccommunitycolleges.edu/Programs/index.html>

SEM/JF/gr
Attachment

c: Mr. Van Wilson
Ms. Elizabeth Self
Ms. Jennifer Frazelle
Program Coordinators

CC12-001
Email

CURRICULUM STANDARD

Effective Term
Fall 2012
[2012*03]

Curriculum Program Title

Medical Dosimetry (Diploma)

Code

D45450

Concentration

(not applicable)

Curriculum Description

The curriculum is designed to prepare individuals to work in the care of cancer patients as medical dosimetrist. The curriculum provides instruction to enable the participant to become a member of the radiation oncology team.

The curriculum content includes specific coursework to provide classroom and direct clinical experience to train the student in the fundamentals of medical dosimetry practice using current technology, tools and techniques. Students will participate in studies related to the role of the medical dosimetrist and professional ethics, radiation oncology anatomy, treatment planning, dose calculations, clinical oncology, brachytherapy, dosimetry physics, radiation protection, quality assurance and computer applications.

Graduates of the program will be able to obtain employment as a medical dosimetrist and apply to the Medical Dosimetrist Certification Board (MDCB) to sit for a national certification.

Admission criteria include the completion of a diploma in Radiation Therapy.

Curriculum Requirements*

[for associate degree, diploma, and certificate programs in accordance with 23 NCAC 02E.0204 (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 experience, including cooperative education, practicums, and internships, 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.*

Major Hours

[ref. 23 NCAC 02E.0204 (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 experience, including cooperative education, practicums, and internships, 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 Dosimetry (Diploma) (D45450)

| | AAS | Diploma | Certificate |
|--|---------------|----------------|--------------------|
| Minimum Major Hours Required | 49 SHC | 30 SHC | 12 SHC |
| A. CORE | | 37 SHC | |
| Required Courses: | | | |
| DOS 210 Introduction to Dosimetry | 2 SHC | | |
| DOS 220 Treatment Planning I | 3 SHC | | |
| DOS 221 Treatment Planning II | 2 SHC | | |
| DOS 230 Clinical Research Exper | 2 SHC | | |
| DOS 240 Clinical Education I | 8 SHC | | |
| DOS 241 Clinical Education II | 8 SHC | | |
| DOS 242 Clinical Education III | 5 SHC | | |
| DOS 243 Dosimetry Physics II | 2 SHC | | |
| DOS 250 Dose Calculations | 2 SHC | | |
| DOS 260 Brachytherapy Planning | 3 SHC | | |
| B. CONCENTRATION <i>(Not applicable)</i> | | | |
| C. OTHER MAJOR HOURS | | | |
| <i>To be selected from the following prefixes:</i> | | | |
| CIS, COE, CSC, CTS, DOS, RAD, and RTT | | | |
| <i>Foreign language courses (including ASL) that are not designated as approved other major hours may be included in all programs up to a maximum of 3 semester hours of credit.</i> | | | |

CURRICULUM STANDARD

Effective Term
Summer 2012
[2012*02]

Curriculum Program Title

Applied Engineering Technology

Code

A40130

Concentration

(not applicable)

Curriculum Description

The Applied Engineering Technology curriculum prepares individuals to become engineering technicians who incorporate the principles and theories of science, engineering, and mathematics 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.

*Curriculum Requirements**

[for associate degree, diploma, and certificate programs in accordance with 23 NCAC 02E.0204 (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 experience, including cooperative education, practicums, and internships, 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.*

Major Hours

[ref. 23 NCAC 02E.0204 (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 experience, including cooperative education, practicums, and internships, 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.

Applied Engineering Technology A40130

| | AAS | Diploma | Certificate | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|---------------|---------------|----------------------------|---------------------------|-------|---|-----|-----|-------------------|-------|--|-----|-----|-----------|-------|--|-----|-----|--------------------------|-------|--|-----|-----|------------------------|-------|--|-----|-----|---------------------|-------|--|-----|-----|---------------------|-------|--|-----|-----|-------------------------|-------|--|-----|-----|---------------------------|-------|--|-----|-----|-----------------------|-------|--|-----|-----|---------------------------|-------|--|-----|-----|---------------------|-------|--|-----|-----|--------------|-------|--|-----|-----|---------------------|-------|--|-----|-----|--------------|-------|--|-----|-----|----------------------------|-------|--|-----|-----|-----------------------|-------|--|-----|-----|------------------|-------|--|-----|-----|-------------------------|-------|-----------|-----------|--|
| Minimum Major Hours Required | 49 SHC | 30 SHC | 12 SHC | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <p>A. CORE Courses required for the diploma are designated with *</p> <p>Required Courses:</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 5%;">*</td> <td style="width: 10%;">EGR</td> <td style="width: 10%;">111</td> <td style="width: 45%;">Engineer Comp and Careers</td> <td style="width: 10%; text-align: right;">3 SHC</td> </tr> <tr> <td>*</td> <td>ISC</td> <td>112</td> <td>Industrial Safety</td> <td style="text-align: right;">2 SHC</td> </tr> </table> <p>Required Subject Areas:</p> <p>*Computers. Select one:</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 5%;"></td> <td style="width: 10%;">DFT</td> <td style="width: 10%;">119</td> <td style="width: 45%;">Basic CAD</td> <td style="width: 10%; text-align: right;">2 SHC</td> </tr> <tr> <td></td> <td>ELC</td> <td>127</td> <td>Software for Technicians</td> <td style="text-align: right;">2 SHC</td> </tr> </table> <p>*Electricity. Select one:</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 5%;"></td> <td style="width: 10%;">ELC</td> <td style="width: 10%;">131</td> <td style="width: 45%;">DC/AC Circuit Analysis</td> <td style="width: 10%; text-align: right;">5 SHC</td> </tr> <tr> <td></td> <td>ELC</td> <td>138</td> <td>DC Circuit Analysis</td> <td style="text-align: right;">3 SHC</td> </tr> <tr> <td></td> <td>ELC</td> <td>139</td> <td>AC Circuit Analysis</td> <td style="text-align: right;">3 SHC</td> </tr> </table> <p>*Engineering. Select one:</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 5%;"></td> <td style="width: 10%;">HYD</td> <td style="width: 10%;">110</td> <td style="width: 45%;">Hydraulics/Pneumatics I</td> <td style="width: 10%; text-align: right;">3 SHC</td> </tr> <tr> <td></td> <td>HYD</td> <td>112</td> <td>Hydraulics-Med/Heavy Duty</td> <td style="text-align: right;">3 SHC</td> </tr> <tr> <td></td> <td>HYD</td> <td>115</td> <td>Industrial Hydraulics</td> <td style="text-align: right;">3 SHC</td> </tr> <tr> <td></td> <td>MNT</td> <td>165</td> <td>Mechanical Industrial Sys</td> <td style="text-align: right;">2 SHC</td> </tr> </table> <p>*Motors and Controls. Select one:</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 5%;"></td> <td style="width: 10%;">ELC</td> <td style="width: 10%;">117</td> <td style="width: 45%;">Motors and Controls</td> <td style="width: 10%; text-align: right;">4 SHC</td> </tr> <tr> <td></td> <td>ELC</td> <td>128</td> <td>Intro to PLC</td> <td style="text-align: right;">3 SHC</td> </tr> </table> <p>*Specialty. Select one:</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 5%;"></td> <td style="width: 10%;">ATR</td> <td style="width: 10%;">112</td> <td style="width: 45%;">Intro to Automation</td> <td style="width: 10%; text-align: right;">3 SHC</td> </tr> <tr> <td></td> <td>CET</td> <td>110</td> <td>Intro to CET</td> <td style="text-align: right;">1 SHC</td> </tr> <tr> <td></td> <td>ELN</td> <td>131</td> <td>Semiconductor Applications</td> <td style="text-align: right;">4 SHC</td> </tr> <tr> <td></td> <td>ISC</td> <td>129</td> <td>Qual Testing Lab Tech</td> <td style="text-align: right;">3 SHC</td> </tr> <tr> <td></td> <td>MEC</td> <td>110</td> <td>Intro to CAD/CAM</td> <td style="text-align: right;">2 SHC</td> </tr> <tr> <td></td> <td>PCI</td> <td>150</td> <td>Process Control Systems</td> <td style="text-align: right;">4 SHC</td> </tr> </table> | * | EGR | 111 | Engineer Comp and Careers | 3 SHC | * | ISC | 112 | Industrial Safety | 2 SHC | | DFT | 119 | Basic CAD | 2 SHC | | ELC | 127 | Software for Technicians | 2 SHC | | ELC | 131 | DC/AC Circuit Analysis | 5 SHC | | ELC | 138 | DC Circuit Analysis | 3 SHC | | ELC | 139 | AC Circuit Analysis | 3 SHC | | HYD | 110 | Hydraulics/Pneumatics I | 3 SHC | | HYD | 112 | Hydraulics-Med/Heavy Duty | 3 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 | | ATR | 112 | Intro to Automation | 3 SHC | | CET | 110 | Intro to CET | 1 SHC | | ELN | 131 | Semiconductor Applications | 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 | 16-23 SHC | 16-23 SHC | |
| * | EGR | 111 | Engineer Comp and Careers | 3 SHC | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| * | ISC | 112 | Industrial Safety | 2 SHC | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | DFT | 119 | Basic CAD | 2 SHC | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | ELC | 127 | Software for Technicians | 2 SHC | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | ELC | 131 | DC/AC Circuit Analysis | 5 SHC | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | ELC | 138 | DC Circuit Analysis | 3 SHC | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | ELC | 139 | AC Circuit Analysis | 3 SHC | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | HYD | 110 | Hydraulics/Pneumatics I | 3 SHC | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | HYD | 112 | Hydraulics-Med/Heavy Duty | 3 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 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | ATR | 112 | Intro to Automation | 3 SHC | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | CET | 110 | Intro to CET | 1 SHC | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | ELN | 131 | Semiconductor Applications | 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 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CONCENTRATION (Not applicable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <p>C. OTHER MAJOR HOURS To be selected from the following prefixes: ATR, BPM, BPR, BTC, BUS, CET, CIS, CIV, CHM, COE, CSC, CTS, DDF, DFT, EGR, ELC, ELN, HYD, ISC, MAC, MAT, MEC, MNT, NOS, PCI, PHY, and WLD</p> <p><i>Foreign language courses (including ASL) that are not designated as approved other major hours may be included in all programs up to a maximum of 3 semester hours of credit.</i></p> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |