

# **ENGINEERING** **TECHNOLOGY**

## **Overview**

TTC's Division of Industrial and Engineering Technology offers a wide array of associate degrees and certificates designed to provide excellent career opportunities in the highly technical and rapidly expanding area of engineering technology.

Courses offered within the Department of Engineering Technology are designed to develop critical thinking and broad technical knowledge. The engineering technology principles learned are applied to practical engineering problems. Classroom study is related to shop, laboratory and field experience.

The associate degree programs require two years of study. The certificate programs require two to four semesters of study and are offered when sufficient interest is generated to support class-size groups. All have requirements for admission. Students interested in any of these programs should call the Department of Engineering Technology at 843.574.6156 for additional information on programs, scheduling and admission requirements. Any of the programs may be completed on a part-time basis, though it will require a longer period of time to do so.

## **General Information**

As with all TTC programs, students interested in Engineering Technology programs should consult with a faculty advisor to discuss program requirements, class times and frequency of offerings. For more information, call 843.574.6156.

## **Cancellation Policy**

TTC reserves the right to cancel courses due to inadequate enrollment.

## **Programs of Study**

### **Associate Degree Programs**

Civil Engineering Technology  
Electronics Engineering Technology  
Mechanical Engineering Technology

### **Certificate Programs**

Architectural Design Graphics I  
Architectural Design Graphics II  
Basic Electronic Journeyman I  
Chemical Engineering Transfer (USC)  
Civil Engineering Transfer (The Citadel)  
Civil/Mechanical Engineering Transfer (USC)  
Computer Aided Design I  
Computer Aided Design II  
Construction Management  
Electrical Engineering Transfer (The Citadel)  
Electrical Engineering Transfer (USC)  
Engineering Design Graphics  
Land Development Technology  
Surveying

### **Transfer Programs**

Transfer Engineering Programs  
The Citadel  
University of South Carolina  
Clemson University

## **Civil Engineering Technology**

### **Associate in Engineering Technology Credit Requirements: 74 Semester Credit Hours Day**

The Civil Engineering Technology program prepares students to perform at the technician level in engineering design, drafting, surveying and construction. Employers of Civil Engineering Technology graduates include engineering consultants, surveying firms, state and federal governments, public works, construction companies, highway departments, and soil and materials testing firms. Graduates typically obtain jobs working under the supervision of land development engineers, building inspectors, construction superintendent trainees, and soil and concrete testing technicians. They aid engineers in the design of steel and concrete structures, highways, storm drainage, sewage and water supply systems. They also obtain jobs as members of survey teams or in computer-aided drafting and design.

## Recommended Sequence of Courses

### First Semester – Fall

CET 120	Construction Materials	3
EGR 285	Engineering Surveying I	3
EGR 295	Engineering Surveying Lab I	1
***EGT 109	Introduction to Engineering Design Graphics	3
ENG 101	English Composition I	3
*MAT 110	College Algebra	3
<b>Total</b>		<b>16</b>

### Second Semester – Spring

EGT 151	Introduction to CAD	3
EGR 110	Introduction to Computer Environment	3
EGR 286	Engineering Surveying II	3
EGR 296	Engineering Surveying Lab II	1
*MAT 111	College Trigonometry	3
<b>Total</b>		<b>13</b>

### Third Semester – Summer

EGR 190	Statics	3
**PHY 201	Physics I	4
PSY 201	General Psychology	3
SPC 205	Public Speaking	3
<b>Total</b>		<b>13</b>

### Fourth Semester – Fall

CET 210	Strength of Materials	3
CET 218	Hydraulics	3
GMT 250	Evidence Procedures for Boundary Control	3
*MAT 130	Elementary Calculus	3
<b>or</b>		
MAT 120	Probability and Statistics	3
**PHY 202	Physics II	4
<b>Total</b>		<b>16</b>

### Fifth Semester – Spring

CET 215	Soil Mechanics Fundamentals	2
CET 244	Structural Steel Design	3
CET 246	Environmental Systems Technology	3
CET 251	Highway Design	3
ELE CET	Select one course from the Civil Engineering Technology Technical Electives	2
ELE HUM	Select one course from Humanities Electives	3
<b>Total</b>		<b>16</b>

*\*Students may choose any of the following math sequences: MAT 110, MAT 111, MAT 130; or MAT 110, MAT 111, MAT 120; or MAT 110, 111, 140; or MAT 112, MAT 140.*

*\*\*Students may choose PHY 221 instead of PHY 201 and PHY 222 or CHM 110 instead of PHY 202.*

*\*\*\*Allowable alternate: EGR 275*

# Civil Engineering Technology

## Associate in Engineering Technology

### Credit Requirements: 74 Semester Credit Hours Day/Evening

The Civil Engineering Technology program prepares students to perform at the technician level in engineering design, drafting, surveying and construction. Employers of Civil Engineering Technology graduates include engineering consultants, surveying firms, state and federal governments, public works, construction companies, highway departments, and soil and materials testing firms. Graduates typically obtain jobs working under the supervision of land development engineers, building inspectors, construction superintendent trainees, and soil and concrete testing technicians. They aid engineers in the design of steel and concrete structures, highways, storm drainage, sewage and water supply systems. They also obtain jobs as members of survey teams or in computer aided drafting and design. Note: A number of Civil Engineering Technology courses are offered only during the day.

## Recommended Sequence of Courses

### First Semester – Fall

CET 120	Construction Materials	3
***EGT 109	Introduction to Engineering Design Graphics	3
ENG 101	English Composition I	3
<b>Total</b>		<b>9</b>

### Second Semester – Spring

EGR 110	Introduction to Computer Environment	3
*MAT 110	College Algebra	3
ELE HUM	Select one course from Humanities Electives	3
<b>Total</b>		<b>9</b>

### Third Semester – Summer

EGT 151	Introduction to CAD	3
*MAT 111	College Trigonometry	3
<b>Total</b>		<b>6</b>

#### Fourth Semester – Fall

EGR 285	Engineering Surveying I	3
EGR 295	Engineering Surveying Lab I	1
PSY 201	General Psychology	3
<b>Total</b>		<b>7</b>

#### Fifth Semester – Spring

EGR 286	Engineering Surveying II	3
EGR 296	Engineering Surveying Lab II	1
<b>Total</b>		<b>4</b>

#### Sixth Semester – Summer

EGR 190	Statics	3
**PHY 201	Physics I	4
<b>Total</b>		<b>7</b>

#### Seventh Semester – Fall

CET 210	Strength of Materials	3
CET 218	Hydraulics	3
GMT 250	Evidence Procedures for Boundary Control	3
<b>Total</b>		<b>9</b>

#### Eighth Semester – Spring

CET 215	Soil Mechanics Fundamentals	2
CET 251	Highway Design	3
<b>Total</b>		<b>5</b>

#### Ninth Semester – Summer

*MAT 120	Probability and Statistics	3
<b>or</b>		
MAT 130	Elementary Calculus	3
**PHY 202	Physics II	4
<b>Total</b>		<b>7</b>

#### Tenth Semester – Fall

SPC 205	Public Speaking	3
<b>Total</b>		<b>3</b>

#### Eleventh Semester – Spring

CET 244	Structural Steel Design	3
CET 246	Environmental Systems Technology	3
ELE CET	Select one course from Civil Engineering Technology Electives	2
<b>Total</b>		<b>8</b>

*\*Students may choose any of the following math sequences: MAT 110, MAT 111, MAT 130; or MAT 110, 111, 120; or MAT 110, MAT 111, MAT 140 ;or MAT 112, MAT 140.*

*\*\*Students may choose PHY 221 instead of PHY 201 and PHY 222 or CHM 110 instead of PHY 202.*

*\*\*\*Allowable alternate: EGR 275*

# Electronics Engineering Technology

## Associate in Engineering Technology

### Credit Requirements: 70-73 Semester Credit Hours Day

The Electronics Engineering Technology program prepares students for a broad range of jobs in the electrical and electronic fields. Graduates of the program may become employed as broadcast technicians, business machine technicians, customer service representatives, computer service technicians, engineering technicians, laboratory technicians, field engineering technicians, engineering aides, electrical sales technicians, technical writers and electrical instrument technicians.

### Recommended Sequence of Courses

#### First Semester – Fall

EGR 104	Engineering Technology Foundations	3
EGR 110	Introduction to Computer Environment	3
ENG 101	English Composition I	3
MAT 110	College Algebra	3
<b>Total</b>		<b>12</b>

#### Second Semester – Spring

EET 113	Electrical Circuits I	4
EET 145	Digital Circuits	4
EGR 230	Measurement Principles	4
MAT 111	College Trigonometry	3
<b>Total</b>		<b>15</b>

#### Third Semester – Summer

*EGT 109	Introduction to Engineering Design Graphics	3
ELE HUM		3
PHY 201	Physics I	4
SPC 205	Public Speaking	3
<b>Total</b>		<b>13</b>

#### Fourth Semester – Fall

EET 141	Electronic Circuits	4
EEM 251	Programmable Controllers	3
EGR 175	Manufacturing Processes	3
PSY 201	General Psychology	3
ELE EET	Select one course from the Electronics Engineering Technology Math/Science Electives	3-4
<b>Total</b>		<b>16-17</b>

### Fifth Semester – Spring

EEM 252	Programmable Controllers Applications	3
EET 241	Electronic Communications	4
EET 243	Data Communications	3
EGR 255	Engineering Technology Senior Systems Project	2
ELE EET	Select one course from Electronics Engineering Technology Technical Electives	2-4
		<b>Total 14-16</b>

\*Allowable alternate: EGR 275

## Electronics Engineering Technology

### Associate in Engineering Technology

**Credit Requirements: 70-73 Semester Credit Hours Evening**

The Electronics Engineering Technology program prepares students for a broad range of jobs in the electrical and electronic fields. Graduates of the program may become employed as broadcast technicians, business machine technicians, customer service representatives, computer service technicians, engineering technicians, laboratory technicians, field engineering technicians, engineering aides, electrical sales technicians, technical writers and electrical instrument technicians.

### Recommended Sequence of Courses

#### First Semester – Fall

EGR 104	Engineering Technology Foundations	3
EGR 110	Introduction to Computer Environment	3
ENG 101	English Composition I	3
		<b>Total 9</b>

#### Second Semester – Spring

EET 113	Electrical Circuits I	4
EET 145	Digital Circuits	4
MAT 110	College Algebra	3
		<b>Total 11</b>

#### Third Semester – Summer

*EGT 109	Introduction to Engineering Design Graphics	3
MAT 111	College Trigonometry	3
		<b>Total 6</b>

### Fourth Semester – Fall

EGR 175	Manufacturing Processes	3
EET 141	Electronic Circuits	4
SPC 205	Public Speaking	3
		<b>Total 10</b>

### Fifth Semester – Spring

EET 241	Electronic Communications	4
EET 243	Data Communications	3
ELE EET	Select one course from Electronics Engineering Technology Technical Electives	2-4
		<b>Total 9-11</b>

### Sixth Semester – Summer

ELE EET	Select one course from Electronics Engineering Technology Math/Science Electives	3-4
ELE HUM	Select one course from Humanities Electives	3
		<b>Total 6-7</b>

### Seventh Semester – Fall

EEM 251	Programmable Controllers	3
PHY 201	Physics I	4
PSY 201	General Psychology	3
		<b>Total 10</b>

### Eighth Semester – Spring

EEM 252	Programmable Controllers Applications	3
EGR 230	Measurement Principles	4
EGR 255	Engineering Technology Senior Systems Project	2
		<b>Total 9</b>

\*Allowable alternate: EGR 275

## Mechanical Engineering Technology

### Associate in Engineering Technology

**Credit Requirements: 70 Semester Credit Hours Day/Evening**

The Mechanical Engineering Technology program prepares students for employment as engineering technicians with industry, consulting engineering firms, public utilities and governmental agencies. Graduates typically obtain jobs as heating, ventilation and air conditioning technicians, machine parts and marine drafters, engineering assistants, field engineer technicians, quality control

technicians, mechanical design technicians, and product development technicians.

### Recommended Sequence of Courses

#### First Semester – Fall

EGR 104	Engineering Technology Foundations	3
EGR 110	Introduction to Computer Environment	3
ENG 101	English Composition I	3
MAT 110	College Algebra	3
ELE HUM	Select one course from Humanities Electives	3
<b>Total</b>		<b>15</b>

#### Second Semester – Spring

EET 113	Electrical Circuits I	4
EGR 230	Measurement Principles	4
MAT 111	College Trigonometry	3
QAT 232	Statistical Quality Control	3
<b>or</b>		
QAT 240	Advanced Quality Concepts	3
<b>Total</b>		<b>14</b>

#### Third Semester – Summer

*EGT 109	Introduction to Engineering Design Graphics	3
PHY 201	Physics I	4
SPC 205	Public Speaking	3
EGR 190	Statics	3
<b>Total</b>		<b>13</b>

#### Fourth Semester – Fall

CET 210	Strength of Materials	3
EGR 170	Engineering Materials	3
EGR 175	Manufacturing Processes	3
MET 237	Fluids: Principles and Applications	4
PSY 201	General Psychology	3
<b>Total</b>		<b>16</b>

#### Fifth Semester – Spring

EGR 255	Engineering Technology Senior Systems Project	2
EGT 130	Geometric Dimensioning and Tolerancing Applications	3
MET 213	Dynamics	3
MET 226	Applied Heat Principles	4
<b>Total</b>		<b>12</b>

\*Allowable alternate: EGR 275

# Mechanical Engineering Technology

### Associate in Engineering Technology

**Credit Requirements: 70 Semester Credit Hours**

#### Evening

The Mechanical Engineering Technology program prepares students for employment as engineering technicians with industry, consulting engineering firms, public utilities and governmental agencies. Graduates typically obtain jobs as heating, ventilation and air conditioning technicians, machine parts and marine drafters, engineering assistants, field engineer technicians, quality control technicians, mechanical design technicians, and product development technicians.

### Recommended Sequence of Courses

#### First Semester – Fall

EGR 104	Engineering Technology Foundations	3
EGR 110	Introduction to Computer Environment	3
ENG 101	English Composition I	3
<b>Total</b>		<b>9</b>

#### Second Semester – Spring

EET 113	Electrical Circuits I	4
MAT 110	College Algebra	3
PSY 201	General Psychology	3
<b>Total</b>		<b>10</b>

#### Third Semester – Summer

*EGT 109	Introduction to Engineering Design Graphics	3
MAT 111	College Trigonometry	3
<b>Total</b>		<b>6</b>

#### Fourth Semester – Fall

EGR 170	Engineering Materials	3
EGR 175	Manufacturing Processes	3
PHY 201	Physics I	4
<b>Total</b>		<b>10</b>

#### Fifth Semester – Spring

EGT 130	Geometric Dimensioning and Tolerancing Applications	3
EGR 230	Measurement Principles	4
QAT 232	Statistical Quality Control	3
<b>or</b>		
QAT 240	Advanced Quality Concepts	3
<b>Total</b>		<b>10</b>

### Sixth Semester – Summer

ELE HUM	Select one course from Humanities Electives	3
EGR 190	Statics	3
		<b>Total 6</b>

### Seventh Semester – Fall

CET 210	Strength of Materials	3
MET 237	Fluids: Principles and Applications	4
SPC 205	Public Speaking	3
		<b>Total 10</b>

### Eighth Semester – Spring

EGR 255	Engineering Technology Senior Systems Project	2
MET 213	Dynamics	3
MET 226	Applied Heat Principles	4
		<b>Total 9</b>

*\*Allowable alternate: EGR 275*

## Architectural Design Graphics I

### Certificate: Engineering Technology

#### Credit Requirements: 18 Semester Credit Hours

This certificate is designed for students with little or no drafting experience who want to move into architectural graphics. The certificate also includes a study of construction materials and architectural history.

Admission into this program requires proof of high school graduation (or GED) and qualifying scores on SAT, ACT or the TTC placement test.

#### Recommended Sequence of Courses

##### First Semester – Fall

CET 120	Construction Materials	3
EGT 109	Introduction to Engineering Design Graphics	3
		<b>Total 6</b>

##### Second Semester – Spring

AET 202	History of Architecture	3
EGT 151	Introduction to CAD	3
		<b>Total 6</b>

##### Third Semester – Summer

AET 110	Architectural Graphics I	3
EGT 152	Fundamentals of CAD	3
		<b>Total 6</b>

## Architectural Design Graphics II

### Certificate: Engineering Technology

#### Credit Requirements: 14 Semester Credit Hours

This certificate is designed for students with previous experience in architectural graphics who want to move into the advanced areas of architectural graphics. In addition to the drawing classes, this certificate includes the study of software for architectural presentations.

For admission into this program, you must complete Architectural Design Graphics I or receive approval from your advisor.

#### Recommended Sequence of Courses

##### First Semester – Fall

AET 111	Architectural Computer Graphics I	3
		<b>Total 3</b>

##### Second Semester – Spring

AET 120	Architectural Graphics II	3
AET 221	Architectural Computer Graphics II	4
		<b>Total 7</b>

##### Third Semester – Summer

AET 233	Architectural CAD Presentations	4
		<b>Total 4</b>

## Basic Electronic Journeyman I

### Certificate: Engineering Technology

#### Credit Requirements: 20 Semester Credit Hours

The curriculum for this certificate teaches basic electrical/electronics fundamentals needed to enter the electronics technician work force. Courses combine a mixture of classroom and lab instruction using the classroom to present basic theory and the lab to reinforce that theory with hands-on practical experiments.

Admission into this program requires proof of high school graduation (or GED) and qualifying scores on SAT, ACT or the TTC placement test.

#### Recommended Sequence of Courses

##### First Semester

EGR 104	Engineering Technology Foundations3	
*MAT 170	Algebra, Geometry and Trigonometry I	3
		<b>Total 6</b>

## Second Semester

**EET 113	Electrical Circuits I	4
***ENG 150	Basic Communications	3
<b>Total</b>		<b>7</b>

## Third Semester

EEM 131	Solid State Devices	4
QAT 101	Introduction to Quality Assurance	3
<b>Total</b>		<b>7</b>

*\*Or MAT 110 College Algebra*

*\*\*Alternate Sequence, EEM 117 AC/DC Circuits I*

*\*\*\*Alternate Sequences, ENG 101 English Composition I and ENG 260 Advanced Technical Communications; OR ENG 101 English Composition I and SPC 209 Interpersonal Communication*

## Chemical Engineering Transfer (USC)

### Certificate: Engineering Technology

#### Credit Requirements: 35 Semester Credit Hours

This certificate allows you to select course work to transfer to the University of South Carolina's bachelor of science in Chemical Engineering curriculum. Please see an advisor for actual course offering times, scheduling and prerequisites. For entry into the program, you must be a high school graduate or possess a GED and have taken the prerequisite for each course listed.

#### Recommended Sequence of Courses

ECE 221	Introduction to Electrical Engineering I	3
EGR 260	Engineering Statics	3
EGR 262	Engineering Dynamics	3
<b>or</b>		
EGR 264	Introduction to Engineering Mechanics of Solids	3
EGR 266	Engineering Thermodynamics Fundamentals	3
EGR 275	Introduction to Engineering/Computer Graphics	3
MAT 141	Analytic Geometry and Calculus II	4
MAT 240	Analytic Geometry and Calculus III	4
MAT 242	Differential Equations	4
PHY 221	University Physics I	4
PHY 222	University Physics II	4
<b>Total</b>		<b>35</b>

## Civil Engineering Transfer (The Citadel)

### Certificate: Engineering Technology

#### Credit Requirements: 36 Semester Credit Hours

This certificate allows you to select course work to transfer to The Citadel's bachelor of science in Civil Engineering curriculum. Please see an advisor for actual course offering times, scheduling and prerequisites. For entry into the program, you must be a high school graduate or possess a GED and have taken the prerequisite for each course listed.

#### Recommended Sequence of Courses

EGR 260	Engineering Statics	3
EGR 275	Introduction to Engineering/Computer Graphics	3
EGR 282	Introduction to Civil Engineering	2
EGR 285	Engineering Surveying I	3
EGR 286	Engineering Surveying II	3
EGR 295	Engineering Surveying Lab I	1
EGR 296	Engineering Surveying Lab II	1
MAT 141	Analytic Geometry and Calculus II	4
MAT 240	Analytic Geometry and Calculus III	4
MAT 242	Differential Equations	4
PHY 221	University Physics I	4
PHY 222	University Physics II	4
<b>Total</b>		<b>36</b>

## Civil/Mechanical Engineering Transfer (USC)

### Certificate: Engineering Technology

#### Credit Requirements: 38 Semester Credit Hours

This certificate allows you to select course work to transfer to the University of South Carolina's bachelor of science in either Civil or Mechanical Engineering curriculum. Please see an advisor for actual course offering times, scheduling and prerequisites. For entry into the program, you must be a high school graduate or possess a GED and have taken the prerequisite for each course listed.

### Recommended Sequence of Courses

ECE 221	Introduction to Electrical Engineering I	3
EGR 260	Engineering Statics	3
EGR 262	Engineering Dynamics	3
EGR 264	Introduction to Engineering Mechanics of Solids	3
EGR 266	Engineering Thermodynamics Fundamentals	3
EGR 275	Introduction to Engineering/Computer Graphics	3
MAT 141	Analytic Geometry and Calculus II	4
MAT 240	Analytic Geometry and Calculus III	4
MAT 242	Differential Equations	4
PHY 221	University Physics I	4
PHY 222	University Physics II	4
<b>or</b>		
CHM 111	College Chemistry II	4
<b>or</b>		
BIO 101	Biological Science I	4
<b>or</b>		
BIO 102	Biological Science II	4
		<b>Total 38</b>

## Computer Aided Design I

### Certificate: Engineering Technology

#### Credit Requirements: 9 Semester Credit Hours

This program introduces you to the computer and how it can be used to generate engineering drawings. Topics include beginning and advanced two-dimensional CAD.

Admission into this program requires proof of high school graduation (or GED) and qualifying scores on SAT, ACT or the TTC placement test.

### Recommended Sequence of Courses

#### First Semester – Fall

EGT 109	Introduction to Engineering Design Graphics	3
		<b>Total 3</b>

#### Second Semester – Spring

EGT 151	Introduction to CAD	3
		<b>Total 3</b>

#### Third Semester – Summer

EGT 152	Fundamentals of CAD	3
		<b>Total 3</b>

## Computer Aided Design II

### Certificate: Engineering Technology

#### Credit Requirements: 12 Semester Credit Hours

This program is designed for students desiring advanced computer aided design skills to generate engineering drawings. Topics include three-dimensional CAD, feature-based modeling and CAD/CAM applications.

Admission into this program requires proof of high school graduation (or GED) and qualifying scores on SAT, ACT or the TTC placement test.

Completion of the Computer Aided Design I certificate is required for admission into this program.

### Recommended Sequence of Courses

#### First Semester – Fall

EGT 251	Principles of CAD	3
EGT 252	Advanced Computer Aided Design	3
		<b>Total 6</b>

#### Second Semester – Spring

EGT 265	CAD/CAM Applications	3
		<b>Total 3</b>

#### Third Semester – Summer

EGT 245	Principles of Parametric CAD	3
		<b>Total 3</b>

## Construction Management

### Certificate: Industrial Technology

#### Credit Requirements: 17 Semester Credit Hours

This certificate prepares you to work in construction management. It includes reading and understanding construction blueprints, construction materials and methods, materials estimating, scheduling and construction management.

Admission into this program requires proof of high school graduation (or GED) and qualifying scores on SAT, ACT or the TTC placement test.

### Recommended Sequence of Courses

#### First Semester – Fall

CET 120	Construction Materials	3
CET 127	Building Construction and Print Reading	4
		<b>Total 7</b>

### Second Semester – Spring

CET 230	Construction Management	3
CET 245	Cost Estimating	3
		<b>Total 6</b>

### Third Semester – Summer

CET 135	Construction Contracts	2
CET 238	Construction Planning and Scheduling	2
		<b>Total 4</b>

## Electrical Engineering Transfer (The Citadel)

### Certificate: Engineering Technology

#### Credit Requirements: 31 Semester Credit Hours

This certificate allows you to select course work to transfer to The Citadel's bachelor of science in Electrical Engineering curriculum. Please see an advisor for actual course offering times, scheduling and prerequisites. For entry into the program, you must be a high school graduate or possess a GED and have taken the prerequisite for each course listed.

#### Recommended Sequence of Courses

ECE 201	Electrical and Computer Engineering Seminar	1
ECE 205	Electrical and Computer Lab I	3
ECE 221	Introduction to Electrical Engineering I	3
ECE 222	Introduction to Electrical Engineering II	3
EGR 273	Problem Solving for Engineers	2
EGR 275	Introduction to Engineering/Computer Graphics	3
MAT 240	Analytic Geometry and Calculus III	4
MAT 242	Differential Equations	4
PHY 221	University Physics I	4
PHY 222	University Physics II	4
		<b>Total 31</b>

## Electrical Engineering Transfer (USC)

### Certificate: Engineering Technology

#### Credit Requirements: 34 Semester Credit Hours

This certificate allows you to select course work to transfer to the University of South Carolina's bachelor of science in Electrical Engineering

curriculum. Please see an advisor for actual course offering times, scheduling and prerequisites. For entry into the program, you must be a high school graduate or possess a GED and have taken the prerequisite for each course listed.

#### Recommended Sequence of Courses

ECE 205	Electrical and Computer Lab I	3
ECE 211	Introduction to Computer Engineering I	3
ECE 212	Introduction to Computer Engineering II	3
ECE 221	Introduction to Electrical Engineering I	3
ECE 222	Introduction to Electrical Engineering II	3
EGR 270	Introduction to Engineering	3
MAT 240	Analytic Geometry and Calculus III	4
MAT 242	Differential Equations	4
PHY 221	University Physics I	4
PHY 222	University Physics II	4
		<b>Total 34</b>

## Engineering Design Graphics

### Certificate: Engineering Technology

#### Credit Requirements: 34 Semester Credit Hours

The Engineering Design Graphics program prepares you for employment in the broad field of drafting with industry, government and other users of graphic communication. You learn manual and computer aided drafting skills. Graduates typically obtain drafting jobs in architectural, electrical, mechanical, marine, civil, electronics or commercial drafting.

Admission into this program requires proof of high school graduation (or GED) and qualifying scores on SAT, ACT or the TTC placement test.

#### Recommended Sequence of Courses

##### First Semester – Fall

CET 120	Construction Materials	3
EGT 109	Introduction to Engineering Design Graphics	3

or

EGR 275	Introduction to Engineering/Computer Graphics	3
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**Total 6**

### Second Semester – Spring

EGT 115	Engineering Graphics II	4
EGT 151	Introduction to CAD	3
		<b>Total 7</b>

### Third Semester – Summer

AET 110	Architectural Graphics I	3
EGT 210	Engineering Graphics III	4
EGT 220	Structural and Piping Application	4
		<b>Total 11</b>

### Fourth Semester – Fall

AET 111	Architectural Computer Graphics I	3
EGT 152	Fundamentals of CAD	3
		<b>Total 6</b>

### Fifth Semester – Spring

AET 221	Architectural Computer Graphics II	4
		<b>Total 4</b>

## Land Development Technology

### Certificate: Engineering Technology

#### Credit Requirements: 19 Semester Credit Hours

This certificate follows the Surveying certificate and allows a student to select courses that will enhance the possibility of progression in the land development career field. It includes boundary law, subdivision design, water and sewer design, and highway design. Completion of this certificate will satisfy the 12-credit requirement for survey licensing in South Carolina.

For admission to this program, you must complete the Surveying certificate program.

#### Recommended Sequence of Courses

##### First Semester – Spring

MAT 111	College Trigonometry	3
		<b>Total 3</b>

##### Second Semester – Summer

PHY 201	Physics I	4
		<b>Total 4</b>

##### Third Semester – Fall

CET 218	Hydraulics	3
GMT 250	Evidence Procedures for Boundary Control	3
		<b>Total 6</b>

### Fourth Semester – Spring

CET 246	Environmental Systems Technology	3
CET 251	Highway Design	3
		<b>Total 6</b>

## Surveying

### Certificate: Engineering Technology

#### Credit Requirements: 17 Semester Credit Hours

This certificate prepares you for a career in the land surveying job market. It is designed for those individuals having little or no surveying experience and for those who presently hold a position with a surveying firm and desire to move into another position.

Admission into this program requires proof of high school graduation (or GED) and qualifying scores on SAT, ACT or the TTC placement test.

#### Recommended Sequence of Courses

##### First Semester – Summer

*EGT 109	Introduction to Engineering Design Graphics	3
		<b>Total 3</b>

##### Second Semester – Fall

EGR 285	Engineering Surveying I	3
EGR 295	Engineering Surveying Lab I	1
MAT 110	College Algebra	3
		<b>Total 7</b>

##### Third Semester – Spring

EGR 286	Engineering Surveying II	3
EGR 296	Engineering Surveying Lab II	1
EGT 151	Introduction to CAD	3
		<b>Total 7</b>

*\*Allowable alternate: EGR 275*

## Transfer Engineering Programs

### In preparation for Transfer to The Citadel

This is a transfer opportunity for students wanting to transfer into The Citadel in selected programs.

A special articulation agreement between The Citadel and TTC allows students to enroll at TTC with the following courses approved for transfer

to The Citadel. The purpose of this agreement is to provide courses at TTC equivalent to the lower division requirements of The Citadel's Department of Engineering to promote access to and facilitate the transfer of TTC's students into The Citadel's engineering programs.

### Recommended Sequence of Courses

#### A. Civil Engineering

EGR 260	Engineering Statics	3
EGR 270	Introduction to Engineering	3
EGR 282	Introduction to Civil Engineering	2
EGR 285	Engineering Surveying I	3
EGR 286	Engineering Surveying II	3
EGR 295	Engineering Surveying Lab I	1
EGR 296	Engineering Surveying Lab II	1
		<b>Total 16</b>

#### B. Electrical Engineering

ECE 201	Electrical and Computer Engineering Seminar	1
ECE 205	Electrical and Computer Lab I	3
ECE 221	Introduction to Electrical Engineering I	3
ECE 222	Introduction to Electrical Engineering II	3
EGR 270	Introduction to Engineering	3
EGR 273	Problem Solving for Engineers	2
MAT 132	Discrete Mathematics	3
		<b>Total 18</b>

#### Required Humanities/Social Sciences Courses

ENG 101	English Composition I	3
ENG 102	English Composition II	3
ENG 205	English Literature I	3
ENG 206	English Literature II	3
HIS 101	Western Civilization to 1689	3
HIS 102	Western Civilization Post 1689	3
PSY 201	General Psychology	3
		<b>Total 21</b>

#### Math/Science Requirements

CHM 110	College Chemistry I	4
CHM 111	College Chemistry II	4
EGR 275	Introduction to Engineering/ Computer Graphics	3
MAT 140	Analytic Geometry and Calculus I	4
MAT 141	Analytic Geometry and Calculus II	4
MAT 240	Analytic Geometry and Calculus III	4
MAT 242	Differential Equations	4
PHY 221	University Physics I	4
PHY 222	University Physics II	4
		<b>Total 35</b>

Students who complete each 2+2 program course at TTC with a grade of C or higher and who maintain a cumulative GPA of at least 2.0 are eligible to apply for admission to The Citadel Graduate College Civil Engineering or Electrical Engineering programs. This application must be accompanied by a letter of transmittal from TTC's 2+2 advisor. Formal application must be made through The Citadel Graduate College.

Upon completion of the above program, the student will have earned an Associate in Science degree as well as the appropriate Engineering Transfer certificate.

### *In preparation for Transfer to the University of South Carolina, College of Engineering*

This is a transfer opportunity for students wanting to transfer into the University of South Carolina's College of Engineering in selected programs.

An articulation agreement between the University of South Carolina and TTC allows students to enroll at TTC in courses approved for transfer to USC. This agreement provides courses at TTC equivalent to specific lower division requirements of USC's College of Engineering in order to promote access to and facilitate the transfer of TTC's students into USC's engineering programs. Upon completion, students will have satisfied the majority of USC's lower division requirements. Please see the appropriate Engineering Transfer advisor for specific course information.

### *In preparation for Transfer to Clemson University, College of Engineering and Science*

This is a transfer opportunity for students wanting to transfer into Clemson University College of Engineering and Science in selected programs.

An articulation agreement between Clemson and TTC allows students to enroll at TTC in courses approved for transfer to Clemson. This agreement provides courses at TTC equivalent to specific lower division requirements of Clemson's College of Engineering and Science in order to promote access to and facilitate the transfer of TTC's students into Clemson's engineering programs. Upon completion, students will have satisfied the

majority of Clemson's lower division requirements. Please see the appropriate Engineering Transfer advisor for specific course information. In addition, TTC students earning an Associate in Science degree (with math and chemistry bias) may transfer into the bachelor of science in Polymer and Textile Chemistry or in Textile Management. Please see the appropriate advisor in TTC's Science and Mathematics Division for specific course information.