

# Electrical/Electronics Technology

FALL 2009

**[A35220] Associate in Applied Science Degree (Day & Evening); [D35220] Diploma (Day and Evening); [C35220] Certificate (Day & Evening)**

The Electrical/Electronics Technology curriculum is designed to provide training for persons interested in the installation and maintenance of electrical/electronic systems found in residential, commercial and industrial facilities.

Training, most of which is hands-on, will include such topics as AC/DC theory, basic wiring practices, digital electronics, programmable logic controllers, industrial motor controls, the National Electrical Code, and other subjects as local needs require.

Graduates should qualify for a variety of jobs in the electrical/electronics field as an industrial electronics technician or apprentice assisting in the layout, installation and maintenance of electrical/electronic systems.

## COMPETENCIES

Randolph Community College is committed to continuous improvement through program evaluation. One part of the evaluation is to assess program competencies. While our program contains many competencies for students to achieve, each year a select few are chosen for assessment purposes. This year, program competency assessment will focus on these:

1. Plan and construct Residential/Commercial/Industrial wiring circuits.
2. Analyze and explain the operation of electrical controls used in industry.
3. Solve and construct electronic circuits.
4. Classify and explain DC and AC circuits.
5. Show proficiency in the use of digital and analog test equipment.

## GENERAL ADMISSIONS REQUIREMENTS FOR CURRICULUM PROGRAMS

Applicants for admission to Randolph Community College must be 18 years of age or high school graduates. The College will accept students with a high school equivalency diploma. A high school diploma or the equivalent is required of all applicants enrolling in curriculum courses. Persons intending to enroll in a specific curriculum are encouraged to submit their applications at least two months prior to the term in which they wish to enroll. Applicants are not admitted into specific curriculum programs, and thus, not eligible for financial aid until admission requirements are met (i.e. transcripts, testing, etc.). Applications can be obtained from high school counselors and from Student Services.

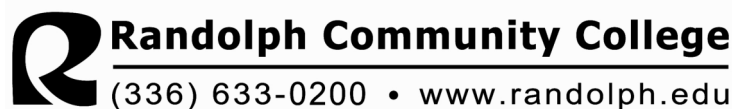
## IN ORDER TO ENROLL, THE STUDENT SHOULD

- complete an RCC application,
- provide official copies of high school transcript and/or GED test scores and all college transcripts,\*
- call (336) 633-0224 to discuss placement testing,
- meet with someone in RCC's financial aid office if necessary, (336) 633-0205,
- meet with your faculty advisor (during specified registration period),
- register and pay for classes (during specified registration period).

\*Applicants who are high school graduates should request a copy of their high school transcript. In cases where the last six weeks' work is not completed, a supplemental transcript should be forwarded to the College after the student's graduation. GED graduates must submit official copies of their GED test scores. Students transferring from other colleges or post-high school institutions must submit official transcripts from all such institutions attended. For transcript release forms, call Student Services, (336) 633-0224. Transcripts are not official unless they are sent directly from the high school or college attended.

## FACULTY ADVISORS

The faculty advisors are: Keith Bunting, (336) 633-0257, [khbunting@randolph.edu](mailto:khbunting@randolph.edu) and Anuar Dau, (336) 633-0257, [amdau@randolph.edu](mailto:amdau@randolph.edu).



## DAY

	Hours/Week			Sem. Hrs
	Class	Lab	Wk. Exp.	Credit
<b>First Year: Fall Semester</b>				
CIS 113 **Computer Basics	0	2	0	1
ELC 113 **Basic Wiring I	2	6	0	4
ELC 125 **Diagrams & Schematics	1	2	0	2
ELC 126 **Electrical Computations	2	2	0	3
ISC 112 **Industrial Safety	<u>2</u>	<u>0</u>	<u>0</u>	<u>2</u>
	<b>7</b>	<b>12</b>	<b>0</b>	<b>12</b>
<b>First Year: Spring Semester</b>				
ELC 112 *DC/AC Electricity	3	6	0	5
ELC 115 *Industrial Wiring	2	6	0	4
ELN 133 Digital Electronics	<u>3</u>	<u>3</u>	<u>0</u>	<u>4</u>
	<b>8</b>	<b>15</b>	<b>0</b>	<b>13</b>
<b>First Year: Summer Session</b>				
ELC 118 *National Electrical Code	1	2	0	2
ENG 111 * Expository Writing	3	0	0	3
PHY 121 * Applied Physics I	<u>3</u>	<u>2</u>	<u>0</u>	<u>4</u>
	<b>7</b>	<b>4</b>	<b>0</b>	<b>9</b>
<b>Second Year: Fall Semester</b>				
ELC 117 *Motors & Controls	2	6	0	4
ELN 131 *Semiconductor Applications	3	3	0	4
--- Humanities/Fine Arts	3	0	0	3
--- Social/Behavioral Science	<u>3</u>	<u>0</u>	<u>0</u>	<u>3</u>
	<b>11</b>	<b>9</b>	<b>0</b>	<b>14</b>
<b>Second Year: Spring Semester</b>				
ELC 128 Introduction to PLC	2	3	0	3
ELN 132 Linear IC Applications	3	3	0	4
HYD 110 Hydraulics/Pneumatics I	2	3	0	3
MEC 110 Introduction to CAD/CAM	<u>1</u>	<u>2</u>	<u>0</u>	<u>2</u>
	<b>8</b>	<b>11</b>	<b>0</b>	<b>12</b>
<b>Second Year: Summer Session</b>				
ELN 229 Industrial Electronics	3	3	0	4
ELN 260 Programmable Logic Controllers	3	3	0	4
ENG 114 Prof. Research & Reporting	<u>3</u>	<u>0</u>	<u>0</u>	<u>3</u>
	<b>9</b>	<b>6</b>	<b>0</b>	<b>11</b>

## EVENING

	Hours/Week			Sem. Hrs
	Class	Lab	Wk. Exp.	Credit
<b>First Year: Fall Semester</b>				
CIS 113 **Computer Basics	0	2	0	1
ELC 125 **Diagrams & Schematics	1	2	0	2
ELC 126 **Electrical Computations	2	2	0	3
ISC 112 **Industrial Safety	<u>2</u>	<u>0</u>	<u>0</u>	<u>2</u>
	<b>5</b>	<b>6</b>	<b>0</b>	<b>8</b>
<b>First Year: Spring Semester</b>				
ELC 112 *DC/AC Electricity	3	6	0	5
ELC 113 **Basic Wiring I	<u>2</u>	<u>6</u>	<u>0</u>	<u>4</u>
	<b>5</b>	<b>12</b>	<b>0</b>	<b>9</b>
<b>First Year: Summer Session</b>				
ELC 118 *National Electrical Code	1	2	0	2
PHY 121 * Applied Physics I	<u>3</u>	<u>2</u>	<u>0</u>	<u>4</u>
	<b>4</b>	<b>4</b>	<b>0</b>	<b>6</b>
<b>Second Year: Fall Semester</b>				
ELC 115 *Industrial Wiring	2	6	0	4
ELN 131 *Semiconductor Applications	<u>3</u>	<u>3</u>	<u>0</u>	<u>4</u>
	<b>5</b>	<b>9</b>	<b>0</b>	<b>8</b>
<b>Second Year: Spring Semester</b>				
ELC 117 *Motors & Controls	2	6	0	4
MEC 110 Introduction to CAD/CAM	<u>1</u>	<u>2</u>	<u>0</u>	<u>2</u>
	<b>3</b>	<b>8</b>	<b>0</b>	<b>6</b>
<b>Second Year: Summer Session</b>				
ELN 132 Linear IC Applications	3	3	0	4
ENG 111 * Expository Writing	<u>3</u>	<u>0</u>	<u>0</u>	<u>3</u>
	<b>6</b>	<b>3</b>	<b>0</b>	<b>7</b>
<b>Third Year: Fall Semester</b>				
ELN 133 Digital Electronics	3	3	0	4
ENG 114 Prof. Research & Reporting	<u>3</u>	<u>0</u>	<u>0</u>	<u>3</u>
	<b>6</b>	<b>3</b>	<b>0</b>	<b>7</b>
<b>Third Year: Spring Semester</b>				
ELC 128 Introduction to PLC	2	3	0	3
ELN 229 Industrial Electronics	<u>3</u>	<u>3</u>	<u>0</u>	<u>4</u>
	<b>5</b>	<b>6</b>	<b>0</b>	<b>7</b>
<b>Third Year: Summer Session</b>				
HYD 110 Hydraulics/Pneumatics I	2	3	0	3
--- Humanities/Fine Arts	<u>3</u>	<u>0</u>	<u>0</u>	<u>3</u>
	<b>5</b>	<b>3</b>	<b>0</b>	<b>6</b>
<b>Fourth Year: Fall Semester</b>				
ELN 260 Programmable Logic Controllers	3	3	0	4
--- Social/Behavioral Science	<u>3</u>	<u>0</u>	<u>0</u>	<u>3</u>
	<b>6</b>	<b>3</b>	<b>0</b>	<b>7</b>

\*Courses required for Diploma

\*\* Courses required for Certificate and Diploma

+ Courses required for Wiring Certificate

<b>TOTAL SEMESTER HOURS CREDIT FOR DEGREE</b>	<b>71</b>
<b>TOTAL SEMESTER HOURS CREDIT FOR CERTIFICATE</b>	<b>12</b>
<b>TOTAL SEMESTER HOURS CREDIT FOR DIPLOMA</b>	<b>38</b>
<b>TOTAL SEMESTER HOURS CREDIT FOR WIRING CERTIFICATE</b>	<b>17</b>

**ELECTRICAL/ELECTRONICS TECHNOLOGY  
CURRICULUM BY SEMESTERS  
PLC Certificate (Day)**

	Hours/Week			Sem. Hrs Credit	
	Class	Lab	Wk. Exp.		
<b>First Year: Fall Semester</b>					
ELC 125	Diagrams & Schematics	1	2	0	2
ELC 126	Electrical Computations	2	2	0	3
ISC 112	Industrial Safety	<u>2</u>	<u>0</u>	<u>0</u>	<u>2</u>
		<b>5</b>	<b>4</b>	<b>0</b>	<b>7</b>
<b>First Year: Spring Semester</b>					
ELC 128	Introduction to PLC	<u>2</u>	<u>3</u>	<u>0</u>	<u>3</u>
		<b>2</b>	<b>3</b>	<b>0</b>	<b>3</b>
<b>First Year: Summer Session</b>					
ELN 260	Programmable Logic Controllers	<u>3</u>	<u>3</u>	<u>0</u>	<u>4</u>
		<b>3</b>	<b>3</b>	<b>0</b>	<b>4</b>
<b>TOTAL SEMESTER HOURS CREDIT FOR PLC CERTIFICATE</b>				<b>14</b>	

**ELECTRICAL/ELECTRONICS TECHNOLOGY  
CURRICULUM BY SEMESTERS  
PLC Certificate (Evening)**

	Hours/Week			Sem. Hrs Credit	
	Class	Lab	Wk. Exp.		
<b>First Year: Fall Semester</b>					
ELC 125	Diagrams & Schematics	1	2	0	2
ELC 126	Electrical Computations	2	2	0	3
ISC 112	Industrial Safety	<u>2</u>	<u>0</u>	<u>0</u>	<u>2</u>
		<b>5</b>	<b>4</b>	<b>0</b>	<b>7</b>
<b>First Year: Spring Semester</b>					
ELC 128	Introduction to PLC	<u>2</u>	<u>3</u>	<u>0</u>	<u>3</u>
		<b>2</b>	<b>3</b>	<b>0</b>	<b>3</b>
<b>Second Year: Fall Semester</b>					
ELN 260	Programmable Logic Controllers	<u>3</u>	<u>3</u>	<u>0</u>	<u>4</u>
		<b>3</b>	<b>3</b>	<b>0</b>	<b>4</b>
<b>TOTAL SEMESTER HOURS CREDIT FOR PLC CERTIFICATE</b>				<b>14</b>	

Visit RCC's website: [www.randolph.edu](http://www.randolph.edu)  
An application for admission is available to be downloaded from the web