

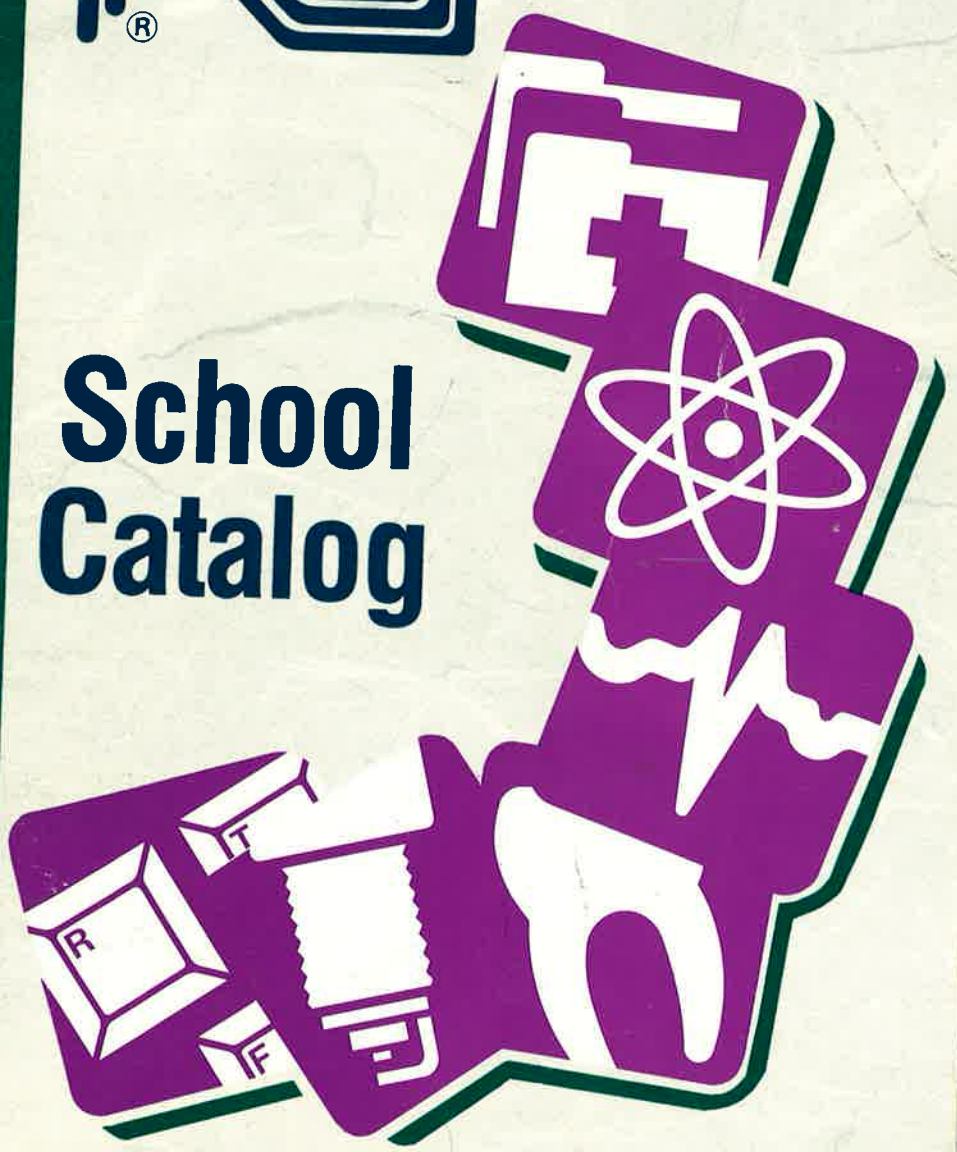
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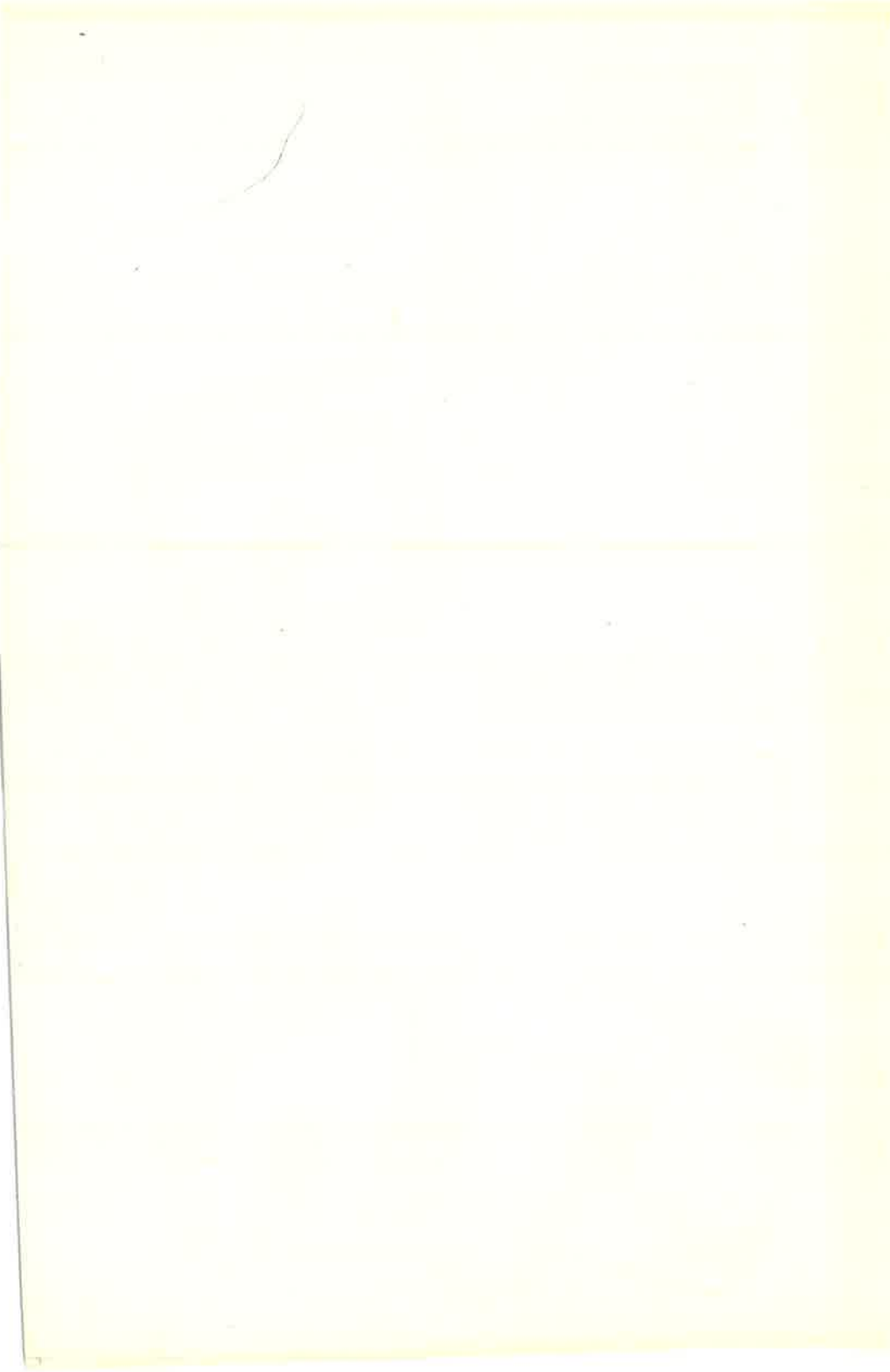
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National
Education
Center

School Catalog





1993-94

**National Education Center®
National Institute of
Technology Campus**

5514 Big Tyler Road
Cross Lanes, West Virginia 25313
(304) 776-6290

Accredited by the Accrediting Commission of Career Schools and
Colleges of Technology and Authorized to Operate by the State of
West Virginia Postsecondary Education.

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Irvine, California

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Persons seeking to resolve problems or complaints should first contact the instructor in charge. Requests for further action should be made to the education director or school director.

**STUDENT COMPLAINT/
GRIEVANCE PROCEDURE**

Schools accredited by the Accrediting Commission for Career Schools/Colleges of Technology of the Career College Association must have a procedure and operational plan for handling student complaints. If a student does not feel that the school has adequately addressed a complaint or concern, the student may consider contacting the Accrediting Commission. All complaints considered by the Commission must be in written form, with permission from the complainant(s) for the Commission to forward a copy of the complaint to the school for a response. The complainant(s) will be kept informed as to the status of the complaint as well as the final resolution by the Commission. Please direct all inquiries to:

Accrediting Commission of Career Schools/
Colleges of Technology
750 First Street, N.E., Suite 905
Washington, DC 20002-4242
(202) 336-6850

A copy of the Commission's Complaint Form is available at the school and may be obtained by contacting the school director.

Table of Contents

About National Education Centers, Inc.....	1
Administration.....	5
Hours of Operation.....	5
Academic Calendars.....	6
Modular Programs.....	8
Electronics and Computer Engineering Technology.....	8
Medical Business and Clinical Specialist.....	16
Admissions.....	24
Administration Policies.....	26
Financial Information.....	40
Student Services.....	48
Family Educational Rights and Privacy Act of 1974.....	50
National Education Centers, Inc. Information.....	52



About National Education Centers, Inc.

The school is part of National Education Centers, Inc., a subsidiary of National Education Corporation. From its beginnings in 1964, National Education Corporation has expanded to become one of the world's leading providers of education and training. National Education Centers, Inc., one of the largest private postsecondary school operators in the United States, is continually seeking to provide the kind of training programs that will best serve the changing needs of students, business and industry. It utilizes new training techniques developed by other National Education Corporation subsidiaries in the publishing, industrial training and independent study fields.

With headquarters in Irvine, California and a network of 49 schools across the United States, National Education Centers, Inc. provides job-oriented training in high-growth, high-technology areas of business and industry. Programs are offered in such diverse fields as advertising design, aeronautics, automotive and diesel repair, broadcasting, business administration, business technology, drafting, electronics, fashion merchandising, interior design, medical and dental assisting, ophthalmic technology and secretarial science.

Students use modern equipment and facilities, similar to the kind they can expect to find on the job. By emphasizing hands-on training, National Education Centers, Inc. provides people entering or re-entering today's competitive market with practical, skill-specific training vital to their success.

National Education Centers, Inc. has emerged as a leader in vocational and technical training by meeting the current needs of business and industry. The company has maintained a longstanding reputation for innovation and high-quality private vocational education.

School History and Description

National Education Center® — National Institute of Technology Campus

National Education Center® — National Institute of Technology Campus in Cross Lanes, West Virginia, was originally a member of United Electronics Institute which was established in 1968. The school was acquired by National Education Corporation in 1981 as a part of the Technical Schools group. In 1983 the name was changed to National Education Center® — National Institute of Technology Campus.

The air-conditioned facility has 16,000 square feet and contains 11 large classrooms designed for theory and laboratory instruction, administrative offices, a library containing reference and reading materials related to the academic programs, study area, public areas and restrooms.

A separate classroom is located at 5508 Big Tyler Road. The air-conditioned facility has 2,000 square feet and contains three classrooms designed for theory and laboratory instruction.

This institution, the facilities it occupies and the equipment it uses comply with all federal, state and local ordinances and regulations, including those related to fire safety, building safety and health.

The school is conveniently located near major freeways. Ample parking is available on campus.

Educational Philosophy

The National Education Centers, Inc. philosophy is to provide quality programs that are sound in concept, implemented by a competent and dedicated faculty, and geared to serve those seeking a solid foundation in knowledge and skills required to obtain employment in their chosen fields. The programs emphasize hands-on training, are relevant to employers' needs and focus on areas that offer strong long-term employment opportunities. To offer students the training and skills that will lead to successful employment, the schools must:

- continually evaluate and update educational programs;
- provide modern facilities and training equipment;
- select teachers with professional experience in the vocations they teach and the ability to motivate and develop students to their greatest potential; and
- promote self-discipline and motivation so that students may enjoy success on the job and in society.

Accreditations, Approvals and Memberships

This school voluntarily undergoes periodic accrediting evaluations by teams of qualified examiners including subject experts and specialists in occupational education and private school administration.

- Accredited by the Accrediting Commission of Career Schools and Colleges of Technology.
- Authorized to Operate by the State of West Virginia Postsecondary Education.
- Eligible institution under the Federal Stafford Loan Program (FSL), Federal Parent Loan for Undergraduate Students (FPLUS) and Federal Supplemental Loan for Students (FSLs).
- Eligible institution for Federal Perkins Loan, Federal Supplemental Educational Opportunity Grant (FSEOG) and Federal Pell Grant programs.
- Provides training services for the State Department of Vocational Rehabilitation.
- Approved for the training of Veterans and eligible persons under the provisions of Title 38, United States Code.
- Member of the Charleston Regional Chamber of Commerce.
- Member of the West Virginia Chamber of Commerce.
- Member of the Instrument Society of America.
- Member of the American Society for Training and Development.
- Member of the National Association for Health Professionals

School accreditations, approvals and memberships are displayed in the lobby. The school director can provide additional information.

Statement of Non-Discrimination

National Education Centers, Inc. does not discriminate on the basis of sex, age, physical handicap, race, creed or religion in its admissions, advising, training, placement, employment or other programs or activities. The School Directors are the coordinators of Title IX — the Educational Amendments Act of 1972, and will receive any inquiries under the sex discrimination provisions of this document.

Administration

Hans Schmidt	Executive Director
Richard Rhodes	Director of Education
Karen Wilkinson	Director of Admissions
Rachel Brinkerhoff	Director of Placement
Terry Lucas	Director of Finance

Faculty

Allied Health Department

Lora Foster, Diploma	Carver Career Center, Rand, WV
Nancy Knopp, C.L.A., A.S.C.P.	Charleston Area Medical Center- Memorial Hospital, Charleston, WV
Joan Mills, Diploma	Carver Career Center, Rand, WV
Rosa Stapelton, Diploma	Career Academy, Washington, D.C.

Technical Department

Paul Bock, Diploma	Illinois Institute of Technology, Chicago, IL
Cynthia Bolton, B.A.	West Virginia State College, Institute, WV
Dennis Criss, A.S.	National Education Center, Cross Lanes, WV
William Loftis, A.S.	National Education Center, Cross Lanes, WV
Rich McCormick, Diploma	United Electronic Institute, Charleston, WV
David Miller, A.S.	National Education Center, Cross Lanes, WV
David Nida, A.S.	United Electronic Institute, Kanawha City, WV
Rita Nichols, M.B.A.	Marshall University, Huntington, WV
Rich Rhodes, B.S.	West Virginia Institute of Technology, Institute, WV
Hilda Rollins, A.S.	National Education Center, Cross Lanes, WV
Charles Tripplett, A.S.	National Education Center, Cross Lanes, WV
David Woodruff, A.S.	National Education Center, Cross Lanes, WV
Todd Whittington, A.S.	National Education Center, Cross Lanes, WV

Hours of Operation

Office:

8:00 AM to 7:00 PM	Monday through Thursday
8:00 AM to 5:00 PM	Friday

School:

7:30 AM to 12:20 PM	Morning	Monday through Thursday
6:00 PM to 10:40 PM	Evening	

Academic Calendars

Class Schedules for Allied Health Programs

Day Schedule —

Five Day Week (Monday through Friday) 1993		Four Day Week (Monday through Thursday) 1994	
Start Dates	End Dates	Start Dates	End Dates
Jan 6 (Wed)	Feb 3 (Wed)	Jan 18 (Tue)	Feb 14 (Mon)
Feb 8 (Mon)	Mar 8 (Mon)	Feb 16 (Wed)	Mar 16 (Wed)
Mar 10 (Wed)	Apr 6 (Tue)	Mar 23 (Wed)	Apr 20 (Wed)
Apr 12 (Mon)	May 7 (Fri)	Apr 25 (Mon)	May 20 (Fri)
May 10 (Mon)	Jun 7 (Mon)	May 25 (Wed)	Jun 22 (Wed)
Jun 14 (Mon)	Jul 12 (Mon)	Jun 27 (Mon)	Jul 25 (Mon)
Jul 14 (Wed)	Aug 10 (Tue)	Jul 27 (Wed)	Aug 23 (Tue)
Aug 11 (Wed)	Sep 8 (Wed)	Aug 29 (Mon)	Sep 26 (Mon)
Sep 13 (Mon)	Oct 8 (Fri)	Sep 28 (Wed)	Oct 25 (Tue)
Oct 11 (Mon)	Nov 5 (Fri)	Oct 31 (Mon)	Nov 29 (Tue)
Nov 8 (Mon)	Dec 7 (Tue)	Dec 5 (Mon)	Jan 10, 1995
Dec 8 (Wed)	Jan 12, 1994 (Wed)		(Tue)

Evening Schedule — Four Day Week (Monday through Thursday)

1993		1994	
Start Dates	End Dates	Start Dates	End Dates
Jan 6 (Wed)	Feb 3 (Wed)	Jan 18 (Tue)	Feb 14 (Mon)
Feb 8 (Mon)	Mar 8 (Mon)	Feb 16 (Wed)	Mar 16 (Wed)
Mar 10 (Wed)	Apr 6 (Tue)	Mar 23 (Wed)	Apr 19 (Tue)
Apr 12 (Mon)	May 6 (Thu)	Apr 25 (Mon)	May 19 (Thu)
May 10 (Mon)	Jun 7 (Mon)	May 25 (Wed)	Jun 22 (Wed)
Jun 14 (Mon)	Jul 12 (Mon)	Jun 27 (Mon)	Jul 25 (Mon)
Jul 14 (Wed)	Aug 10 (Tue)	Jul 27 (Wed)	Aug 23 (Tue)
Aug 11 (Wed)	Sep 8 (Wed)	Aug 29 (Mon)	Sep 26 (Mon)
Sep 13 (Mon)	Oct 7 (Thu)	Sep 28 (Wed)	Oct 25 (Tue)
Oct 11 (Mon)	Nov 4 (Thu)	Oct 31 (Mon)	Nov 28 (Mon)
Nov 8 (Mon)	Dec 6 (Mon)	Dec 5 (Mon)	Jan 10, 1995
Dec 8 (Wed)	Jan 11, 1994 (Tue)		(Tue)

Class Schedules for Technical Programs

Day Schedule — Four Day Week (Monday through Thursday)

1993		1994	
Start Dates	End Dates	Start Dates	End Dates
Jan 4 (Mon)	Feb 26 (Fri)	Jan 10 (Mon)	Mar 4 (Fri)
Mar 2 (Tue)	Apr 23 (Fri)	Mar 7 (Mon)	Apr 28 (Thu)
Apr 27 (Tue)	Jun 18 (Fri)	May 2 (Mon)	Jun 23 (Thu)
Jul 6 (Tue)	Aug 26 (Thu)	Jul 11 (Mon)	Aug 31 (Wed)
Aug 30 (Mon)	Oct 21 (Thu)	Sep 1 (Thu)	Oct 25 (Tue)
Oct 25 (Mon)	Dec 17 (Fri)	Oct 27 (Thu)	Dec 21 (Wed)

Evening Schedule — Four Day Week (Monday through Thursday)

1993		1994	
Start Dates	End Dates	Start Dates	End Dates
Jan 4 (Mon)	Feb 25 (Thu)	Jan 10 (Mon)	Mar 3 (Thu)
Mar 2 (Tue)	Apr 21 (Wed)	Mar 7 (Mon)	Apr 26 (Tue)
Apr 27 (Tue)	Jun 17 (Thu)	May 2 (Mon)	Jun 22 (Wed)
Jul 6 (Tue)	Aug 25 (Wed)	Jul 11 (Mon)	Aug 30 (Tue)
Aug 30 (Mon)	Oct 20 (Wed)	Sep 1 (Thu)	Oct 25 (Tue)
Oct 25 (Mon)	Dec 17 (Fri)	Oct 27 (Thu)	Dec 20 (Tue)

Student Holidays

	1993	1994
New Year's Day	Jan 1	Jan 1
Martin Luther King, Jr.'s Birthday (observed)	Jan 18	Jan 17
President's Day (observed)	Feb 15	Feb 21
Spring Holiday	Apr 9	Apr 1
Memorial Day (observed)	May 31	May 30
Independence Day	Jul 5	Jul 4
Labor Day	Sep 6	Sep 5
Thanksgiving	Nov 25&26	Nov 24&25
Winter Recess	Dec 24-31	Dec 23-31

Modular Programs

A Modular Program is a complete body of prescribed subjects or studies that is divided into periods of instruction approximately four to eight weeks in length.

Electronics and Computer Engineering Technology Program

■ Degree Program — 19 Months 1500 Clock Hours/120.0 Credit Units

The electronics industry is one of the fastest growing fields today. The scientific and technological revolution is creating numerous career opportunities. The demand for people with technical skills is growing twice as fast as for any other group.

The Electronics and Computer Engineering Technology Program is designed to satisfy students' desire to learn a technical skill in a field that has experienced rapid growth. The curriculum explores both the fundamentals and advanced theory in electronics, integrated circuits, microprocessors and computer technology. Laboratory experience is an integral part of the program. Students also receive a background in the fundamentals of digital computers and hands-on experience with test equipment.

Graduates of the program are qualified for entry-level positions such as computer service technician, electronic laboratory technician, field service engineer, installation technician and electronic technician in communications, instrumentation, digital and computer electronics. Graduates are also qualified for a position as sales representative in the computer, electronics (including electronic office equipment) and microprocessing fields.

Upon successful completion of all areas of the 19-month program, a specialized associate degree in electronics and computer engineering technology will be awarded.

■ Program Outline

Course Number	Course Title	Clock Hours	Credit Units
DC Circuits and Applications Module			
EC101	Basic Electricity and Electronics	60	6.0
EC103	Mathematics for Electronic Circuits	30	3.0
EC104	Basic Electronics/DC Circuits Laboratory	<u>60</u>	<u>3.0</u>
	Total	150	12.0
AC Circuits and Applications Module			
ED101	AC Theory	60	6.0
ED103	Mathematics for AC Electronics Circuits	30	3.0
ED104	AC Circuits Laboratory	<u>60</u>	<u>3.0</u>
	Total	150	12.0
Semiconductor Devices and Applications Module			
EE201	Semiconductors	90	9.0
EE204	Semiconductors Laboratory	<u>60</u>	<u>3.0</u>
	Total	150	12.0
Transistors and Special-purpose Semiconductors Module			
EF201	Transistors and Special-purpose Semiconductors	90	9.0
EF204	Transistor Circuits and Amplifiers Laboratory	<u>60</u>	<u>3.0</u>
	Total	150	12.0
Microelectronics and RF Communications Module			
EG201	Microelectronics and RF Communications	90	9.0
EG204	Microelectronics and RF Communications Laboratory	<u>60</u>	<u>3.0</u>
	Total	150	12.0
Digital Circuits and RF Communications Module			
EH201	Radio Communications and Digital Circuits	90	9.0
EH204	Radio Communications and Digital Circuits Laboratory	<u>60</u>	<u>3.0</u>
	Total	150	12.0

Course Number	Course Title	Clock Hours	Credit Units
Digital Systems Module			
EI301	Computer Systems and Software	60	6.0
EI303	Binary and Computer Mathematics	30	3.0
EI304	Digital Systems Laboratory	<u>60</u>	<u>3.0</u>
	Total	150	12.0
Microprocessors Module			
EJ301	Microprocessors	90	9.0
EJ304	Microprocessors Laboratory	<u>60</u>	<u>3.0</u>
	Total	150	12.0
Computer Systems and Peripherals Module			
EK301	Computer Systems and Peripherals	90	9.0
EK304	Systems Project Laboratory	<u>60</u>	<u>3.0</u>
	Total	150	12.0
Digital Communications and Professional Strategies Module			
EL301	Logic Families and Digital Communications	50	5.0
EL302	Professional Strategies	40	4.0
EL304	Logic Families, Digital Communications and Customer Relations Laboratory	<u>60</u>	<u>3.0</u>
	Total	150	12.0
	Program Total	1500	120.0

Modules may not be offered in the sequence shown.

Major Equipment
Analog/Digital Trainers
Computers
Digital Multimeters
Frequency Counters
Function Generators
Logic Analyzers
Oscilloscopes
Power Supplies
Printers

■ Course Descriptions

EC101 Basic Electricity and Electronics

60 Clock Hours/6.0 Credit Units

This course is designed to introduce students to the field of electronics. Sources of electricity, atomic theory, and the principles and practices of fundamental direct current (DC) theory are taught. Concepts related to Ohm's law, resistance, series circuits, parallel circuits and series-parallel circuits for resistors are presented. The concepts of voltage drop and current will be presented using Kirchoff's laws, Norton's theorem and Thevenin's theorem.

EC103 Mathematics for Electronic Circuits

30 Clock Hours/3.0 Credit Units

This course introduces the concepts of electrical circuit network analysis. Students learn the arithmetic and algebraic functions required to use Ohm's law, Kirchoff's laws for current and voltage, the superposition theorem, Thevenin's theorem and Norton's theorem.

EC104 Basic Electronics/DC Circuits Laboratory

60 Clock Hours/3.0 Credit Units

This course introduces the safe use of hand tools and soldering techniques used in the electronics industry. Students construct laboratory projects involving series, parallel and series-parallel resistive circuits, and use various test instruments such as analog volt-ohmmeters, digital multimeters, signal generators and power supplies. Students complete a project demonstrating their skills and ability to integrate key concepts related to DC circuits.

ED101 AC Theory

60 Clock Hours/6.0 Credit Units

This course provides an introduction to the principles and applications of alternating current (AC). The theory of alternating current, inductive reactance (X_L), capacitive reactance (X_C) and the sine waves for voltage and current are studied. The phase relations among resistive-inductive (R-L) circuits, resistive-capacitive (R-C) circuits and R-L-C circuits in series and parallel circuits are analyzed.

ED103 Mathematics for AC Electronics Circuits

30 Clock Hours/3.0 Credit Units

This course introduces the principles and techniques for analysis of alternating current (AC) circuits. Students learn the algebraic and trigonometric functions required to perform analysis of AC electronic circuits using applicable laws of physics and vector analysis.

ED104 AC Circuits Laboratory

60 Clock Hours/3.0 Credit Units

This course provides students with AC circuit applications. Students construct laboratory projects involving series, parallel and series-parallel resistive-capacitive, resistive-inductive, and resistive-capacitive-inductive circuits while using various test instruments such as analog volt-ohmmeters, digital multimeters, signal generators, oscilloscopes and power supplies to analyze these circuits.

EE201 Semiconductors

90 Clock Hours/9.0 Credit Units

This course introduces the principles of semiconductors. Diode theory and related concepts are presented. Students learn about the operation of circuits involving diodes. In addition to circuits based on standard diode function, special diode circuits are discussed. Students learn the underlying principles of transistors and transistor circuits. Transistor circuits and their application in common circuits are discussed in depth. The concepts of biasing for bipolar transistors are also presented.

EE204 Semiconductors Laboratory

60 Clock Hours/3.0 Credit Units

This course provides hands-on laboratory experience with the subjects presented in course EE201. Students construct and test circuits that show the principles of semiconductors, diode theory and related concepts. Students also test the operation of standard diodes and special-purpose diode circuits. Students test transistor circuits and their applications. The methods of biasing for bipolar transistors are also studied.

EF201 Transistors and Special-purpose Semiconductors

90 Clock Hours/9.0 Credit Units

This course familiarizes students with special-purpose transistors and semiconductor devices. The course focuses on silicon devices such as silicon-controlled rectifier (SCR), triac and the silicon-controlled switch (SCS), bipolar transistor devices and applications. The students learn the basic principles and applications of electronic semiconductor oscillator and amplifier circuits. Basic diode and transistor theory is reviewed to provide a foundation for the course.

EF204 Transistor Circuits and Amplifiers Laboratory

60 Clock Hours/3.0 Credit Units

This course introduces students to laboratory experiments using transistor circuits and amplifiers that are covered in course EF201. Logical troubleshooting techniques are emphasized. Report writing skills are developed.

EG201 Microelectronics and RF Communications

90 Clock Hours/9.0 Credit Units

This course introduces linear and digital integrated circuits. The operational amplifier is explored in depth, and the applications of the operational amplifier in DC, audio applications, summing amplifiers, difference amplifiers and other integrated circuits are presented. A review of diodes and transistors is included. The course also introduces the concepts of radio frequency (RF) communication, amplitude modulation (AM), frequency modulation (FM), oscillators and mixers as they relate to the operation of AM and FM radios.

EG204 Microelectronics and RF Communications Laboratory

60 Clock Hours/3.0 Credit Units

This course enables students to use laboratory experimentation to reinforce and apply concepts learned in course EG201 and other courses. It includes demonstrations and experiments using integrated circuits, operational amplifiers and RF communications.

EH201 Radio Communications and Digital Circuits

90 Clock Hours/9.0 Credit Units

This course covers principles and essential characteristics of communication electronics. Subjects include modulation, transmitters, receivers, transceivers, the principles of antennas, transmission lines and radio-frequency wave propagation. The digital electronics portion of the course provides an understanding of binary logic gates, symbols, truth tables, encoding, decoding, seven-segment displays, flip-flops, counters and shift registers. Students also learn Boolean algebra and Karnaugh mapping — with the emphasis on Karnaugh mapping. The principles of digital ICs and simple interfacing are also presented.

EH204 Radio Communications and Digital Circuits Laboratory

60 Clock Hours/3.0 Credit Units

This course enables students to use laboratory experimentation to reinforce and apply concepts learned in course EH201 and other courses. It includes demonstrations and experiments in RF communications and digital electronics using integrated circuits.

EI301 Computer Systems and Software

60 Clock Hours/6.0 Credit Units

This course introduces digital concepts, the historical evolution of the computer and the use of Boolean algebra in analyzing digital circuits. The software portion of the course focuses on operating systems used with IBM and IBM-compatible hardware, including MS-DOS and PC-DOS.

EI303 Binary and Computer Mathematics

30 Clock Hours/3.0 Credit Units

This course introduces the binary and arithmetic functions of a computer. Binary, octal and hexadecimal number systems are presented and used in theoretical computer circuit simulation.

EI304 Digital Systems Laboratory

60 Clock Hours/3.0 Credit Units

This course provides an opportunity for students to use laboratory experimentation to reinforce and apply concepts learned in courses EI301 and EI303. Students complete experiments to demonstrate their skills and ability to integrate key concepts related to digital systems.

EJ301 Microprocessors

90 Clock Hours/9.0 Credit Units

This course presents microprocessor technology. Basic logic concepts are reviewed in preparation for discussion of microprocessor fundamentals. The course explores the function of the 8088 chip. Students will learn logic and support symbols related to the 8088, as well as addressing, memory and I/O function. The course also introduces the 80386 family of microprocessors and the concepts related to interfacing and memory of this chip.

EJ304 Microprocessors Laboratory

60 Clock Hours/3.0 Credit Units

This course gives students an opportunity to use laboratory experimentation to reinforce and apply concepts learned from previous courses. Students complete a project to demonstrate their skills and ability to integrate key concepts related to microprocessors.

EK301 Computer Systems and Peripherals

90 Clock Hours/9.0 Credit Units

This course provides an introduction to the field of computer-based equipment. It explores the operation of microcomputer hardware and the functions and applications of peripheral devices such as floppy disks, cathode ray tubes (CRTs) and keyboards. The course also introduces students to electronic troubleshooting concepts as they apply to systems.

EK304 Systems Project Laboratory

60 Clock Hours/3.0 Credit Units

This course uses computers to introduce students to the fundamentals of electronics troubleshooting. Students apply concepts learned in EK301 to set up and verify the operation of computers and peripherals.

EL301 Logic Families and Digital Communications

50 Clock Hours/5.0 Credit Units

This course explores the basic logic families used in digital systems. Flip-flops, counters, shift registers and memories are discussed in detail. In the digital communications portion of the course, students learn basic data communications concepts, including digital-to-analog and analog-to-digital conversions.

EL302 Professional Strategies

40 Clock Hours/4.0 Credit Units

This course helps prepare students for a job in the electronics marketplace. Topics include elements of writing, professional appearance and demeanor, and resume preparation. Students are expected to develop a business letter and resume during the course.

EL304 Logic Families, Digital Communications and Customer Relations Laboratory

60 Clock Hours/3.0 Credit Units

This laboratory course provides hands-on experience that complements technical concepts presented in EL301. Through role-playing exercises and case study analyses, the student also develops important skills in the area of customer relations.

Medical Business and Clinical Specialist Program

■ Diploma Program — 12 Months 960 Clock Hours/72.0 Credit Units

The health care field offers a variety of interesting and challenging career opportunities to graduates of the Medical Business and Clinical Specialist Program. In this program, students will receive training in front-office and back-office skills required in a doctor's office, hospital, clinic, home health agency or insurance company. Graduates will be able to perform clinical duties and will be proficient in a variety of administrative and managerial tasks.

The objective of the Medical Business and Clinical Specialist Program is to provide graduates with the skills and knowledge that will enable them to qualify for an entry-level position as a medical office clerk, medical insurance processor, medical receptionist, medical transcriber, hospital clerk, medical ward clerk or medical assistant.

This training program is divided into 12 learning units called modules. Each module stands alone as a unit of study. Students will begin in modules A through F, completing them in any sequence. After they complete modules A through F, students may take modules G through L in any sequence.

In each module, students study subject-related medical terminology and develop keyboarding skills on the computer and typewriter.

Completion of the Medical Business and Clinical Specialist Program is acknowledged by the awarding of a diploma.

■ Program Outline

Module Number	Module Title	Clock Hours	Credit Units
Module A	Patient Care and Communication	80	6.0
Module B	Clinical Assisting, Pharmacology and Bookkeeping	80	6.0
Module C	Health Sciences and Medical Insurance	80	6.0
Module D	Cardiopulmonary and Electro-cardiography	80	6.0
Module E	Laboratory Procedures	80	6.0
Module F	Body Systems and Radiation Safety	80	6.0
Module G	Patient Records	80	6.0
Module H	Patient Accounting	80	6.0
Module I	Insurance Billing	80	6.0
Module J	Medical Office Procedures	80	6.0
Module K	Medical Specialties	80	6.0
Module L	Clinical Specialties	80	6.0
	Program Total	960	72.0

Major Equipment

Anatomical Torso
Anatomy Charts
Autoclave
Blood Chemistry Analyzer
Calculators
Dot Matrix and Letter Quality Printers
Electrocardiography Machine
Electronic Typewriters
Examination Tables
Mayo Stands
Microscopes
Personal Computers
Sphygmomanometers
Stethoscopes
Surgical Instruments
Teletrainer
Training Manikins
Transcription Machines

■ Module Descriptions

Module descriptions include the module number, title, synopsis, a listing of the lecture/theory hours, laboratory or externship hours and credit units. For example, the listing "40/40/6.0" indicates that the module consists of 40 hours of lecture/theory and 40 hours of laboratory work, and provides a total of 6.0 credit units.

Module A — Patient Care and Communication *40/40/6.0*

Module A emphasizes patient care, including the complete physical exam and positioning and draping. Anatomy and physiology of the sense organs and common diseases related to each are taught. Students learn how to interact and communicate effectively by exploring the fundamentals of interpersonal relations. Front-office skills performed by the health care professional are included. Students perform invasive procedures and check vital signs. Basic keyboarding skills on the typewriter and computer are developed, and students become familiar with essential medical terminology.

Module B — Clinical Assisting, Pharmacology and Bookkeeping *40/40/6.0*

Module B stresses the importance of asepsis and sterile technique in today's health care environment. Students learn about basic bacteriology and its relationship to infection and disease control. Basic therapeutic drugs, their use, classification and effects on the body are covered. Students become familiar with the principles of administering medication. They perform invasive procedures and check vital signs. In order to understand front-office and back-office interaction, students are introduced to bookkeeping procedures essential to the medical office. Basic keyboarding skills on the typewriter and computer are developed, and students become familiar with essential medical terminology.

Module C — Health Sciences and Medical Insurance

40/40/6.0

Module C focuses on the health science field, including areas of importance to the health care worker. Students learn general first aid, including bandaging techniques. Students become familiar with the structures and functions of the human digestive system, as well as the basic four food groups and their importance for good nutrition. A cursory look at health care insurance and coding and billing procedures are included. Students perform invasive procedures and check vital signs. Basic keyboarding skills on the typewriter and computer are developed, and students become familiar with essential medical terminology.

Module D — Cardiopulmonary and Electrocardiography

40/40/6.0

Module D examines the circulatory and respiratory systems, including the structure and function of the heart and lungs. Students learn about the electrical pathways of the heart muscle in preparation for connecting EKG leads and recording an electrocardiogram. Students are introduced to the legal responsibilities of the physician and office assistant. The module covers physician/patient contracts and consents, and the professional ethics of medicine as they relate to the health care assistant. Students perform invasive procedures and check vital signs. Basic keyboarding skills on the typewriter and computer are developed, and students become familiar with essential medical terminology.

Module E — Laboratory Procedures

40/40/6.0

Module E introduces laboratory procedures commonly performed in a physician's office. Students learn specimen identification, collection, handling and transportation procedures, and practice venipuncture and routine diagnostic hematology. Maintenance and care of laboratory equipment and supplies are discussed. The renal system's anatomical structures, functions and common diseases are presented. Students perform invasive procedures and check vital signs. Basic keyboarding skills on the typewriter and computer are developed, and students become familiar with essential medical terminology.

Module F — Body Systems and Radiation Safety

40/40/6.0

In Module F, students learn to identify the basic structural components and functions of the skeletal, endocrine and reproductive systems. A cardiopulmonary resuscitation (CPR) course enables students to respond to an emergency. Students also become familiar with the principles of radiation safety in the medical office. Students perform invasive procedures and check vital signs. Basic keyboarding skills on the typewriter and computer are developed, and students become familiar with essential medical terminology.

Module G — Patient Records

40/40/6.0

Module G focuses on setting up, maintaining and organizing patient records manually and electronically. Students become familiar with records management systems and develop skills in alphabetic filing and indexing. They work with a pegboard system to accomplish tasks in cash management and reconciliation. Students become familiar with the variety of reports and letters typically encountered in a medical office, and the guidelines for producing each. Students strengthen their English grammar and writing skills, develop speed and accuracy on the keyboard, acquire advanced word processing and transcription skills, and become familiar with specialized medical terminology.

Module H — Patient Accounting

40/40/6.0

Module H introduces the accounting functions of the medical office. Instruction focuses on a computerized accounting system, allowing students to perform all the steps of the accounting cycle on a microcomputer. Patient billing is an integral part of the module. The collection process—including legal aspects, psychology of collecting and customer service—is explored. Students learn about outside services available to support the tasks of a medical office. Medical law and ethics are also discussed. Students strengthen their English grammar and writing skills, develop speed and accuracy on the keyboard, acquire advanced word processing and transcription skills, and become familiar with specialized medical terminology.

Module I — Insurance Billing

40/40/6.0

Module I develops students' proficiency in preparing and processing insurance claims. Types of insurance programs, including plans and types of coverage, are discussed. National coding systems used for claim processing are studied. Students learn how to obtain information from patient charts and ledgers in order to complete insurance forms accurately. Students are given hypothetical insurance billing situations, then select appropriate forms, codes and procedures to process the insurance claims for optimal reimbursement. Students strengthen their English grammar and writing skills, develop speed and accuracy on the keyboard, acquire advanced word processing and transcription skills, and become familiar with specialized medical terminology.

Module J — Medical Office Procedures

40/40/6.0

Module J focuses on the medical office and the procedures and technology that enable it to function efficiently. The module emphasizes the interpersonal skills that allow the office staff to interact successfully with customers, the hardware and software that help the decision-making process and the guidelines that must be followed. Students are trained in common emergency procedures. Students strengthen their English grammar and writing skills, develop speed and accuracy on the keyboard, acquire advanced word processing and transcription skills, and become familiar with specialized medical terminology.

Module K — Medical Specialties

40/40/6.0

Module K provides students with an overview of hospitals and clinics and their various departments. The pathological conditions of medical specialty areas — urinary, endocrine, cardiology and respiratory — are emphasized. Students become familiar with the diseases, causes, symptoms, tests, treatments and coding related to each of the specialties. Students strengthen their English grammar and writing skills, develop speed and accuracy on the keyboard, acquire advanced word processing and transcription skills, and become familiar with specialized medical terminology.

Module L — Clinical Specialties

40/40/6.0

In Module L, students focus on the clinical specialties — psychiatry, ophthalmology, toxicology and neurology — and study the pathological conditions and coding for each specialty. Students become familiar with the diseases, causes, symptoms, tests and treatments related to each specialty. Students learn how to create job descriptions and how to hire the right person for a job. Students strengthen their English grammar and writing skills, develop speed and accuracy on the keyboard, acquire advanced word processing and transcription skills, and become familiar with specialized medical terminology.

Admissions

Requirements and Procedures

Students should apply for admission as soon as possible in order to be officially accepted for a specific program and starting date. To apply, students should complete the Qualification Questionnaire or Application Form and bring it to the school, or call for a priority appointment to visit the school and receive a tour of its facilities.

All applicants are required to complete a personal interview with an admissions representative. Parents and spouses are encouraged to attend. This gives applicants and their families an opportunity to see the school's equipment and facilities, and to ask questions relating to National Education Center®, curriculum, and career objectives. Personal interviews also enable school administrators to determine whether an applicant is acceptable for enrollment into the program.

Once an applicant has completed and submitted the Enrollment Agreement and Qualification Questionnaire, the school reviews the information and informs the applicant of its decision. If an applicant is not accepted, all fees paid to the school are refunded.

The school follows an open enrollment system. Individuals may apply up to one year in advance of a scheduled class start. The following items must be completed at the time of application:

- request for College Transcript, High School Transcript or General Equivalency Diploma (GED);
- Enrollment Agreement (if applicant is under 18 years of age it must be signed by parent or guardian);
- financial aid forms (if applicant wishes to apply for Financial Aid); and
- payment of registration fee.

The school reserves the right to reject students if the items listed above are not successfully completed.

Prospective students must have a high school diploma or a recognized equivalency certificate (GED) and are required to furnish proof by providing the school with an official copy of a high school transcript or GED certificate.

■ Allied Health Programs

Students entering an allied health program must also complete a Health Notice prior to the start of the training program. Health Notice forms are provided by the school.

Credit for Previous Education or Training

The Education Department will evaluate previous education and training that may be applicable to an educational program. If the education and/or training meet the standards for transfer of credit, the program may be shortened and the tuition reduced accordingly.

Administration Policies

Academic Achievement

■ Grading

The progress and quality of students' work is measured by a system of letter grades and grade percentages and points. The meaning of each grade and its equivalent percentage and point value is as follows:

Allied Health Programs			Technical Programs			Point Value
Grade	Meaning	Percentage	Grade	Meaning	Percentage	
A	Excellent	100-90	A	Excellent	100-90	4.0
B	Very Good	89-80	B	Very Good	89-80	3.0
C	Good	79-70	C	Good	79-70	2.0
F	Failing	69-0	D	Poor	69-60	1.0
			F	Failing	59-0	0.0

■ Graduation Requirements

To be eligible for graduation, students in allied health programs must:

- complete all required classroom modules with a grade of at least 70 percent;
- complete all program requirements; and
- pay all monies due to the school.

Students in technical programs must:

- complete all required classroom training with a cumulative grade point average of at least 2.0;
- pass the graduate exam, if applicable;
- complete all program requirements; and
- pay all monies due to the school.

Students on academic probation may qualify for graduation if, at the end of the probationary term, they meet the Satisfactory Academic Progress requirements.

■ Student Awards

Awards for outstanding achievement are presented to deserving students based on performance and faculty recommendations. Graduates find these awards can be an asset when they seek future employment. The Education Department can provide information regarding the specific awards presented.

Satisfactory Academic Progress

■ Requirements

To remain eligible for financial aid, students must show satisfactory academic progress. In order to maintain satisfactory academic progress, students in allied health programs must:

- achieve a cumulative grade percent average (GPA) of at least 70 percent (on a scale of 0-100 percent);
- progress at a satisfactory rate toward completion of their programs; and
- complete the training programs within 1½ times the planned program length.

Students in technical programs must:

- achieve a cumulative grade point average (GPA) of at least 2.0 (on a scale of 0 to 4.0);
- progress at a satisfactory rate toward completion of their programs; and
- complete the training programs within 1½ times the planned program length.

Students whose cumulative GPA falls below 70 percent or 2.0 are notified that they are being placed on academic probation, which will begin at the start of the next term. Students on academic probation are considered to be making satisfactory academic progress.

■ Reinstatement Policy

Students who have been terminated for failing to maintain satisfactory academic progress may be reinstated at the start of the next grading period through the appeal process. However, students will not be eligible for financial aid during the reinstatement term. If students achieve a cumulative GPA of at least 70 percent or 2.0 by the end of that term, they will be considered to be making satisfactory academic progress and will be eligible for financial aid consideration in subsequent terms.

■ Academic Probation

The initial probationary period covers the module that starts immediately after students have been placed on academic probation. Students remain eligible for financial aid during this period. They are required to repeat the failed module during the probationary period unless the module is not offered at that time. In that case, the failed module must be repeated at the earliest possible date.

If, by the end of the probationary period, students achieve a cumulative GPA of at least 70 percent or 2.0, they are notified that the probationary status is removed. If they have not achieved a cumulative GPA of at least 70 percent or 2.0 but have achieved a GPA of at least 70 percent or 2.0 for the module, students may continue their training programs for a second probationary period. Students who do not achieve a GPA of 70 percent or 2.0 for the module will be withdrawn from training by the school.

Students who continue their training for a second probationary period will remain eligible for financial aid. If they achieve a cumulative GPA of at least 70 percent or 2.0 by the end of the second probationary period, they are informed that they have been removed from probation. Students who do not achieve a cumulative GPA of 70 percent or 2.0 will be withdrawn from training by the school.

■ Incompletes

An "Incomplete" cannot be given as a final grade. However, at the end of the term students may, with the instructor's approval, be granted a maximum extension of 14 days to complete the required class work, assignments and tests. The extension cannot be used to make up accrued absences from class. If students do not complete the required class work, assignments and tests within the extension period, they will receive a failing grade of "F" or "zero" for the module. The "F" or "zero" will be averaged in with the students' other grades to determine the cumulative GPA.

■ Withdrawals

Week One

When students withdraw from a module during the first five school days of the module, their names will cease to appear on any class roster or grade report and grades will not be recorded. Students who wish to withdraw from a module during this time frame must request approval from the instructor or department head. The withdrawal request must then be approved by either the department head or education director. If a request for withdrawal is approved, the status of "Withdrawal" (W) is recorded but will not have an impact on the module grade or cumulative GPA.

Week Two through the End of the Module

To withdraw from a module after the first week, students must request approval from the instructor. Requests for withdrawal must then be approved by the department head and education director. Extreme academic or personal hardship is considered the only justification for withdrawal.

If a request for withdrawal is approved, the status of "Withdrawal Passing" (WP) or "Withdrawal Failing" (WF) is assigned. "WP" indicates that a student was passing the module (at least 70 percent or 2.0) as of the last day of attendance. "WF" indicates that a student was not passing the module (less than 70 percent or 2.0) as of the last day of class attendance.

Withdrawal status remains on record until students complete the module from which they withdrew. It will have no effect on the module grade or cumulative GPA.

Students who are contemplating withdrawing from a module should be cautioned that:

- the entire scheduled length of the module of study they are currently enrolled in is counted in their maximum program completion time;
- they may have to wait for the appropriate module to be offered;
- they must repeat the entire module from which they elected to withdraw prior to receiving a final grade; and
- financial aid and/or tuition costs may be affected.

■ Exit Interviews

Students who want to discontinue their training for any reason are required to schedule an exit interview with a school official. This meeting can help the school correct any problems and may assist students with their plans. In many cases, the problem hindering successful completion of the educational objective can be resolved during an exit interview.

■ Repeat Policy

Students who fail a module must retake that module. The failing grade will be averaged into their GPA at the end of the module and remain in effect until the module is repeated and a new grade is earned. Students may repeat a failed module only once. If repeating the training is required, the length of the program must not exceed 1½ times the planned program length.

When students repeat a module, the last grade received for that module replaces the original grade on the transcript (even if the original grade was higher), and this new grade is used to calculate the cumulative GPA. The attendance for the repeated module will replace the attendance for the original module.

Students who receive a passing grade for a module but wish to repeat the module may do so (subject to seat availability), but they may repeat a completed module only once.

NOTE: National Education Center® does not permit students to make up absences that accrue on their attendance record during the classroom training modules.

■ Maximum Program Completion Time

Students must complete the entire training program within 1 ½ times the planned program length.

In order to complete the training within the specified time period, students must maintain a satisfactory rate of progress; that is, a certain percentage of the program must be completed at set measurement points during the program.

Measuring the rate of progress ensures that students have completed enough of the program at the end of each measurement point to finish the entire program within the maximum allowable time. The maximum completion time and rate of progress schedule for each program can be obtained from the Education Department.

If students exceed the maximum allowable program length or do not progress at a sufficient rate, their training program will be interrupted. No probationary status is allowed.

■ Additional Information on Satisfactory Academic Progress

Additional information on satisfactory academic progress and its application to specific circumstances is available upon request from the education director.

■ Student Appeal Process

Students whose training programs are terminated by the school will be informed of the right to appeal that decision. Students must initiate the process by submitting a written request for re-admittance to the school director.

Students will not be entitled to appeal if they are terminated for the following reasons:

- Exceeding the maximum program completion time.
- Violating the attendance policy without successfully completing at least 66 percent of the program of study.

■ Required Study Time

In order to complete the required class assignments, students are expected to spend outside time studying. The amount of time will vary according to individual student abilities. Students are responsible for reading all study materials issued by their instructors and must turn in assignments at the designated time.

Unit of Credit

■ Academic

A clock hour is a class period of 50 to 60 minutes of instruction. Clock hours are converted into credit units to allow for comparison with other postsecondary schools. Students earn one quarter credit unit for each 10 clock hours of lecture or 20 hours of laboratory.

■ Financial Aid

Students may be awarded financial assistance, if eligible, based on the number of financial aid credit units they will earn. For certain educational programs, the U.S. Department of Education requires that students earn one financial aid credit unit for each 20 contact hours of instruction.

This requirement does not apply to all programs. Students should contact the Financial Aid Department for information regarding their program of study.

Class Size

To provide meaningful instruction and training, classes are limited in size. Standard lecture classes average 30 students.

Laboratory classes enable students to receive hands-on training using equipment similar to that used by business and industry. To ensure that students receive the necessary time and attention to build experience and confidence, typical laboratory classes average 30 students.

Attendance Requirements

Regular attendance and punctuality will help students develop good habits necessary for successful careers. Satisfactory attendance is established when students are present in the assigned classroom for the scheduled amount of time.

National Education Center® does not permit students to make up absences that accrue on their attendance record.

Students are encouraged to schedule medical or dental appointments after school hours and should notify the school if they plan to be absent.

■ Allied Health Programs

To maintain satisfactory attendance, students may not be absent more than five days per module, at which time they will be required to repeat the module. Absences will include tardies or early departures. Students who are not in attendance for at least 50 percent of the scheduled class time will be considered absent for the day. Students who have been absent from all of their scheduled classes for more than 10 consecutive school days, not including scheduled school holidays, will be dropped from the training program.

Students who miss more than 20 percent of the total classroom hours scheduled for the program also will be dropped. If they have successfully completed at least 66 percent of the scheduled classroom hours, they will first be notified of the school's intention to drop them. These students must successfully appeal their termination within five school days in order to continue their training. If their termination is not successfully appealed, they will be dropped from the program.

■ Technical Programs

Students must be present in the assigned classroom for at least 80 percent of the scheduled time of any module to achieve satisfactory attendance. Students who do not achieve satisfactory attendance will be required to repeat the module. Absences will include tardies or early departures. Students who are not in attendance for at least 50 percent of the scheduled class time will be considered absent for the day. Students who have been absent from all of their scheduled classes for more than 10 consecutive school days, not including scheduled school holidays, will be dropped from the training program.

Students who miss more than 20 percent of the total classroom hours scheduled for the program also will be dropped. If they have successfully completed at least 66 percent of the scheduled classroom hours, they will first be notified of the school's intention to drop them. These students must successfully appeal their termination within five school days in order to continue their training. If their termination is not successfully appealed, they will be dropped from the program.

■ Tardiness/Early Departure

Students who are more than 15 minutes late to class or who leave class more than 15 minutes early on four occasions will accrue one day of absence on their attendance record. Students who are not in attendance for at least 50 percent of the scheduled class time will be considered absent for the day.

■ Make-up Work

Students are required to make up all assignments and work missed as a result of absence. The instructor may assign additional outside make-up work to be completed for each absence. Arrangements to take any tests missed because of an absence must be made with the instructor and approved by the school administration.

■ Veteran Students

The Veterans Administration has established rules and regulations pertaining to attendance policy and procedures. The Education Department can provide this information upon request.

Leave of Absence Policy

Students may be granted one leave of absence (LOA) per 12-month period for certain specific and acceptable purposes.

The leave should not exceed one grading period or 60 calendar-days, whichever is longer.

Written requests for a leave of absence — properly approved, dated and signed by the student and either the school director, education director or appropriate department head — will be maintained in the student's file.

A student who fails to return from the leave within three days of the date indicated in the written request will be terminated from the training program.

■ Effects of Leave of Absence on Satisfactory Academic Progress

Students who are contemplating a leave of absence should be cautioned that one or more of the following factors will affect their eligibility to graduate within the maximum program completion time:

- Students returning from a leave of absence are not guaranteed that the module required to maintain the normal progression in their training program will be available at the time of re-entry.
- They may have to wait for the appropriate module to be offered.
- They must repeat the entire module from which they elected to withdraw prior to receiving a final grade.
- Financial aid and/or tuition costs may be affected.

Weather Emergencies

The school reserves the right to close during weather emergencies or other "acts of God." Under these conditions, students will not be considered absent. Instructors will cover any missed material to ensure completion of the entire program.

Clothing and Personal Property

All personal property is the sole responsibility of the student, and the school does not assume liability for any loss or damage. Clothing and other small items should be marked clearly with the student's name and address. Vehicles should always be locked to avoid theft.

Code of Conduct

Students are required to follow standards of conduct that are typically expected in the working world. Students may be placed on probation or terminated for violation of the school's personal conduct standards. Violations include dishonesty, unprofessional conduct, use of profanity, insubordination, noncompliance with safety rules, use of alcohol or drugs on school property, and vandalism of school property or equipment. Students will be removed from probation if, in the opinion of the school director, they demonstrate adherence to the personal conduct rules. If terminated, students may re-enter the following term with permission of the school director.

Dress Code

A clean, neat appearance will help students develop appropriate dress habits for new careers. Employers may visit the campus to interview students for jobs and to give guest lectures, so it is important that the student body convey a professional image at all times.

Dress and grooming should be appropriate for the area of study. Because a variety of business and industrial equipment is used during training, certain items of clothing — such as shorts and open shoes — are not acceptable for obvious safety reasons.

Students may have limited funds, so wardrobes need not be expensive or extensive — simply in good taste. Women may wear skirts and blouses, dresses or slacks. For men, acceptable items include slacks, sports shirts, dress shirts, and coat and tie when required.

Students dressed inappropriately will not be admitted to school. Those who continually disregard the dress code will be warned and, if necessary, disciplinary action will be taken.

■ Allied Health Programs

Students enrolled in allied health programs are required to wear the standard nurse's white uniform and shoes with a closed heel and toe. Uniforms are not included in the tuition price and should be ordered as soon as possible after acceptance into the program. Students should review the established dress and appearance guidelines for details. This information will be available upon enrollment.

Academic Advisement and Tutoring

Students' educational objectives, grades, attendance and conduct are reviewed on a regular basis. Students will be notified if their academic standing or conduct is unacceptable. Failure to improve academic standing or behavior may result in further action. Tutorial programs and academic advisement are provided for students who are experiencing difficulties with their classwork. Students are encouraged to seek academic assistance through the Education Department.

Disabled Students

Disabled students should make arrangements to meet with the school director prior to the start of class to review facilities and required accommodations.

Health/Medical Care

Students must take proper care of their health so that they can do their best in school. This means regular hours, plenty of sleep, sufficient exercise and nutritious food. Students who become seriously ill or contract a communicable disease should stay home and recover, but remember to notify the school immediately. All medical and dental appointments should be made after school hours.

The school will not be responsible for rendering any medical assistance but will refer students upon request to the proper medical facility.

Termination Procedures

Students may be terminated by the school for cause. Examples include, but are not limited to, the following:

- Violation of the school's attendance policy.
- Failure to maintain satisfactory academic progress.
- Violation of personal conduct standards.
- Inability to meet financial obligations to the school.

Students to be terminated are notified in writing and may appeal to the school director.

Transferability of Credits

The school director's office provides information on schools that may accept National Education Center® course credits toward their programs. However, this school does not guarantee transferability of credits to any other college, university or institution, and it should not be assumed that any courses or programs described in this catalog can be transferred to another institution. Any decision on the comparability, appropriateness and applicability of credits and whether they may be accepted is the decision of the receiving institution.

Grievance Procedure

If students have a grievance with any school policy or procedure, they may submit written complaints to the school director. Written responses will be given within seven working days.

Policy and Program Changes

The school catalog is current as of the time of printing. National Education Center® reserves the right to make changes in organizational structure, and policy and procedures as circumstances dictate. National Education Center® reserves the right to make changes in equipment and materials and modify curriculum as it deems necessary. When size and curriculum permit, classes may be combined to provide meaningful instruction and training and contribute to the level of interaction among students. Students are expected to be familiar with the information presented in this school catalog.

Financial Information

Tuition and Fees

The Enrollment Agreement obligates the student and the school for the entire program of instruction. Students' financial obligations will be calculated in accordance with the refund policy in the contract and this school catalog. The content and schedule for the programs and academic terms are described in this catalog.

See the catalog insert for information on tuition and fees.

■ Advance Enrollment

Individuals may apply up to one year before a scheduled class start. Students who enroll more than three months before their first class session must pay a refundable tuition deposit of \$100.

■ Voluntary Prepayment Plan

The school provides a voluntary prepayment plan to students and their families to help reduce the balance due upon entry. Details are available upon request from the Financial Aid Office.

Cancellation/Refund Policy

■ Cancellations

When students enroll in a program of study, they reserve places that cannot be made available to other students. The Enrollment Agreement does not constitute a contract until it has been approved by an official of the school. If the agreement is not accepted by the school, all monies will be refunded.

Students have the right to cancel the Enrollment Agreement at any time. Cancellation will occur when they give written notice of cancellation at the school address shown on the front page of the Enrollment Agreement. Notice of cancellation may be given by mail, hand delivery or telegram. The notice of cancellation, if sent by mail, is effective when deposited in the mail, properly addressed with postage prepaid. The written notice of cancellation need not take any particular form and, however expressed, is effective if it states that a student no longer wishes to be bound by the Enrollment Agreement. Students will not be penalized if they fail to cancel their enrollment in writing.

If a student cancels within three calendar days of executing the Enrollment Agreement and before the start of classes, all monies paid, including the registration fee, will be refunded. If a student cancels more than three calendar days after executing the Enrollment Agreement and before the start of classes, the school will retain the registration fee and refund any other monies paid.

Students who have not visited the school prior to enrollment may withdraw without penalty within three days following either the regularly scheduled orientation procedures or a tour of the school and inspection of equipment.

■ Refunds

National Education Center® participates in the U.S. Department of Education's student aid programs and is required to comply with the Higher Education Amendments of 1992. This legislation requires the school to offer a refund policy that will provide the most beneficial refund to the students.

A refund is the difference of the amount the student paid to the school (including financial aid) and the amount the school can retain as prescribed by the appropriate refund policy.

Refund calculations are based on one of the following policies:

- The federal pro rata calculation defined by the Higher Education Amendments of 1992 (The student must be attending the school for the first time and may not have completed more than 60 percent of their first enrollment period.)
- The applicable refund requirements specified by the State of West Virginia Postsecondary Education
- The applicable refund requirements specified by the Accrediting Commission of Career Schools and Colleges of Technology

Refund Policies

Any monies due applicants or students will be refunded within 60 days of cancellation, failure to appear on or before the first day of class, withdrawal, or termination. If a student has financed all or part of the program with a third-party or government fund, refunds will be paid or credited to the student's account. Refund computations will be based on the last date of attendance.

If students do not return following a leave of absence (not to exceed one grading period or 60 calendar days, whichever is longer) within three days of the date indicated in the written request, refunds will be made within 30 days from the end of the leave of absence.

In case of prolonged illness or accident, death in the family, or other circumstances that make it impractical to complete the program, the school will make a settlement that is reasonable and fair to both parties.

• Federal Pro Rata Calculation

The school will perform a pro rata refund calculation for students who are attending National Education Center® for the first time and terminate their training before completing more than 60 percent of their first enrollment period (academic year).

Under a pro rata refund calculation, the school is entitled to retain only the percentage of school charges (tuition, fees, room, board, etc.) proportional to the period of enrollment completed by the student.

The period of enrollment completed by the student is calculated by dividing the total number of weeks in the enrollment period into the number of weeks completed in that period (as of the last recorded day of attendance by the student).

The percentage of weeks attended is rounded up to the nearest 10 percent and multiplied by the school charges for the period of enrollment. This amount, plus an administrative fee (which cannot exceed the lesser of \$100 or 5 percent of the tuition, fees, room and board, and other charges assessed the student), may be retained by the school.

The school may retain the entire contract price of the period of enrollment — including tuition, fees and other charges — if the student terminates the training after completing more than 60 percent of the enrollment period.

• State Refund Requirements

The State of West Virginia Postsecondary Education does not define specific refund requirements.

- **Accrediting Commission of Career Schools and Colleges of Technology Refund Requirements**

In the second and subsequent periods of enrollment, the school will refund tuition, fees and other charges as follows:

Time of Withdrawal	Amount School Refunds
During first week of enrollment period.....	90% of total tuition charges for enrollment period
After first week but before 25% of enrollment period is completed.....	55% of total tuition charges for enrollment period
After 25% but before 50% of enrollment period is completed.....	30% of total tuition charges for enrollment period
After 50% of enrollment period is completed	0% of total tuition charges for enrollment period

■ **Veteran Students**

The Veterans Administration has established rules and regulations pertaining to refund policy and procedures. The Financial Aid Department can provide this information upon request.

Textbook Policy

All textbooks remain the property of the school and are loaned to students as needed at the beginning of each term. Students are responsible for returning textbooks to the school in good reusable condition.

The student or student's tuition account will be charged for textbooks not returned and textbooks that have been damaged, defaced or rendered unusable.

Students have the option of purchasing textbooks from the school. Allied health uniforms and incidental supplies, such as paper and pencils, are to be furnished by students. The estimated cost of these items is \$200.

Financial Assistance

National Education Center® offers students several options for payment of tuition. Those able to pay tuition are given a plan to help reduce their fees upon entry. On the other hand, the school recognizes that many students lack the resources to begin their educational training. National Education Center® participates in several types of federal, state and institutional financial aid programs, most of which are based on financial need.

Students seeking financial assistance must first complete the *Free Application for Federal Student Aid*. The school's financial aid representative uses this form to determine students' needs and assist them in deciding what resources are best suited to their circumstances.

If students withdraw from school, an adjustment in the amount they owe may be made, subject to the refund policy of the school. If they received financial aid in excess of what they owe the institution, these funds must be restored to the federal fund account, or to the lender if they received a federal loan.

The priority for returning funds is as follows: 1) FPLUS/FSLs, 2) FSL, 3) Perkins, 4) Pell, 5) FSEOG, 6) Other programs, 7) Student/Parent.

The following is a description of the financial aid programs available at this school. Additional information can be obtained through the Financial Aid Office. Information regarding benefits available from the Bureau of Indian Affairs or the Vocational Rehabilitation Program can be obtained through those agencies.

■ Federal Pell Grant

The Federal Pell Grant Program is the largest federal student aid program. For many students, these grants provide a foundation of financial assistance that may be supplemented by other resources. Eligibility for the Federal Pell Grant Program is determined by a standard formula that is revised and approved every year by the federal government. Unlike loans, grants do not have to be paid back.

■ Federal Stafford Loan (FSL)

Formerly the Guaranteed Student Loan (GSL), this low-interest loan is available to qualified students through the lending institutions or agencies participating in the program and is guaranteed by the U.S. government. Repayment starts six months after the student drops below half-time status, terminates training or graduates.

■ Federal Supplemental Educational Opportunity Grant (FSEOG)

Students who are unable to continue their education without additional assistance may qualify for this program. Grants are based on the funds available and do not have to be repaid. Need is determined by the financial resources of the student and parents, and the cost of attending the school.

■ Federal Perkins Loan

Previously known as the National Direct Student Loan, this low-interest loan is available to qualified students who need financial assistance to meet educational expenses. Repayment of the loan begins nine months after graduation or termination of training.

■ Federal Parent Loan for Undergraduate Students (FPLUS) and Federal Supplemental Loan for Students (FSLs)

The Federal Parent Loan for Undergraduate Students (FPLUS) and Federal Supplemental Loan for Students (FSLs) provide additional funds to help parents or independent students pay for educational expenses. The interest rate for these loans is competitive and the repayment schedules differ. Loan origination fees may be deducted from the loan by the institution making the loan as set forth by government regulations.

■ Scholarships

National Education Center® Scholarship

Scholarships, excluding books and supplies, are awarded to graduating high school seniors, age 17 or older. Winners may choose any of the curricula offered by the school.

High school seniors may obtain scholarship applications from a participating high school guidance department or they may call the school for an application. Students must fill out the application completely and obtain the signature of a counselor or a mathematics, science or vocational-technical teacher. Applications should be mailed in by the end of March or by the designated deadline.

All applicants must take the Career Programs Assessment Test (CPAT), which measures competency in reading, language and mathematics. The top 15 scorers will become the finalists.

A panel of public school officials and representatives of local employers interviews finalists about their personal and career goals, accomplishments and extracurricular activities. This panel will select winners by consensus vote. Alternates may be selected at the discretion of the school to account for scholarships that are offered but not accepted.

Scholarships will be awarded annually. They are not transferrable nor can they be exchanged for cash. Scholarships are good for up to seven months after the award date.

Student Services

Placement Assistance

■ Student

National Education Center® assists students in finding part-time or full-time employment while they attend school. Assistance includes advice in preparing for an interview, aid in securing an interview and a list of available jobs.

■ Graduate

The school encourages students to maintain satisfactory attendance, conduct and academic progress so they may be viewed favorably by prospective employers.

While the school cannot guarantee employment, it has been successful in placing the majority of its graduates in their field of training. All graduating students participate in the following job preparation activities:

- Preparation of resumes and letters of introduction — an important step in a well-planned job search.
- Interviewing techniques. Students acquire effective interviewing skills through practice exercises.
- Job referral by Placement Office. The Placement Office compiles job openings from employers in the area.
- On-campus interviews. Companies may visit the school to interview graduates for employment opportunities.

All students are expected to participate in the placement assistance program and failure to do so may jeopardize these privileges.

Graduates may continue to utilize the school's placement assistance program at no additional cost.

Student Activities

Throughout the school year, activities that encourage school spirit and develop student leadership may be offered. The school believes that participation in these activities is an important part of the educational process, and student involvement is encouraged.

Housing Assistance

Although the school does not maintain dormitory facilities, students who are relocating and must arrange their own housing may request additional assistance from the Student Services Department.

Transportation Assistance

The school maintains information on public transportation and a list of students interested in car pooling.

Field Trips

National Education Center® believes that training is enriched by observing real-life applications. When appropriate, visits are arranged to industrial or professional locations.

Special Lectures

Guest lecturers are invited to speak to students about career opportunities and current industry applications of educational programs.

Drug Abuse Prevention

Information on drug abuse prevention is available at the school for all students and employees.

Family Educational Rights and Privacy Act of 1974, As Amended

Under the authority of the Family Educational Rights and Privacy Act of 1974, the school has established a policy for the release of student and/or graduate information:

1. All students attending this postsecondary institution, parents of minor students and parents of tax-dependent students shall have the right to inspect, review and challenge their academic records, including grades, attendance, advising and any additional information contained in their education record or that of their minor, or tax-dependent child. Students are not entitled to inspect financial records of their parents. As a postsecondary educational institution, parental access to students' records will be allowed without prior consent if the students are dependents as defined in Section 152 of the Internal Revenue Code of 1954.
2. Education records are defined as files, materials or documents that contain information directly related to students and are maintained by the institution. Records are supervised by the school director and access is afforded by school officials for purposes of recording grades, attendance and advising, as well as determining financial aid eligibility.
3. Students may request a review of their records by writing the school director at the address in this catalog. The review will be allowed during regular school hours under appropriate supervision. Students may also obtain copies of their records for a nominal charge.

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4. Students may challenge the record for purposes of correcting or deleting any of the contents. The changes must be made in writing, with the reason for the requested change stated fully. Grades and course evaluations can be challenged only on the grounds that they are improperly recorded.

The instructor and/or advisor involved will review the challenge and if necessary meet with the student, then determine whether to retain, change or delete the disputed data.

If a student requests a further review, the school director will conduct a hearing, giving the student a full and fair opportunity to present evidence relevant to the disputed issues. The student shall be notified of the director's decision, which will be final.

Copies of challenges and/or written explanations regarding the contents of the students' record will be included as part of the students' permanent record.

5. Directory information is information that may be unconditionally released to third parties by the school without the consent of the student unless the student specifically requests that the information not be released. The school requires students to present such requests in writing within 10 days of the date of enrollment.

Directory information includes the student's name, address(es), telephone number(s), birth date and place, program undertaken, dates of attendance and certificate or diploma awarded.

6. Written consent is required before education records may be disclosed to third parties with the exception of the accrediting commissions and government agencies so authorized by law.

NATIONAL EDUCATION CENTERS

The following schools are accredited by the Accrediting Commission of Career Schools and Colleges of Technology:

National Education Center — Bryman Campus located in:

Anaheim, CA	Atlanta, GA
Long Beach, CA	Chicago, IL
Los Angeles, CA	Oak Lawn, IL
Oakland, CA (Branch of Rosemead, CA)	New Orleans, LA (Branch of San Jose, CA)
Rosemead, CA	Brookline, MA
San Francisco, CA	Detroit, MI (Branch of Brookline, MA)
San Jose, CA	Houston, TX – North Campus
Torrance, CA	Houston, TX – South Campus
Winnetka, CA	

National Education Center located in:

Cleveland, OH (Branch of Blairsville, PA)	Fort Worth, TX (Branch of Tampa, FL)
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National Education Center — National Institute of Technology Campus located in:

San Jose, CA (Branch of Wyoming, MI)	Wyoming, MI
West Des Moines, IA	Cuyahoga Falls, OH
Eastpointe, MI	Dallas, TX
Livonia, MI	San Antonio, TX
	Cross Lanes, WV

National Education Center –
Arkansas College of Technology Campus
Little Rock, AR

National Education Center –
Kentucky College of Technology Campus
Louisville, KY

National Education Center –
Arizona Automotive Institute Campus
Glendale, AZ

National Education Center –
Brown Institute Campus
Minneapolis, MN

National Education Center –
Bauder College Campus
Fort Lauderdale, FL

National Education Center –
RETS Campus
Nutley, NJ

National Education Center –
Bauder College Campus
Miami, FL
(Branch of Fort Lauderdale, FL)

National Education Center –
Spartan School of Aeronautics Campus
Tulsa, OK

National Education Center –
Tampa Technical Institute Campus
Tampa, FL

National Education Center –
Vale Technical Institute Campus
Blairsville, PA

The following schools are accredited by the Accrediting Council for Independent Colleges and Schools:

National Education Center –
Sawyer Campus
Commerce, CA

National Education Center –
Sawyer Campus
Sacramento, CA

National Education Center –
Skadron College of Business Campus
San Bernardino, CA

National Education Center –
Capitol Hill Campus
Washington, DC

National Education Center –
Temple School Campus
Baltimore, MD

National Education Center –
Allentown Business School Campus
Allentown, PA

National Education Center –
Thompson Institute Campus
Harrisburg, PA

National Education Center –
Thompson Institute Campus
Philadelphia, PA
(Branch of Harrisburg, PA)

National Education Center –
Kee Business College Campus
Newport News, VA

National Education Center –
Kee Business College Campus
Norfolk, VA

National Education Center –
Kee Business College Campus
Richmond, VA
(Branch of Norfolk, VA)

Statement of Ownership

National Education Center® — National Institute of Technology Campus is operated by National Education Centers, Inc., a California Corporation which is a wholly owned subsidiary of National Education Corporation, a Delaware corporation.

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Officer

Gary M. Cook
President

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**1993-94
Catalog Addendum**

Effective Date
March 7, 1994

The following sections of this addendum replace the corresponding sections of the school catalog dated December 1993.



Modular Programs

A Modular Program is a complete body of prescribed subjects or studies that is divided into periods of instruction approximately four to eight weeks in length.

Electronics and Computer Engineering Technology Program

■ Degree Program — 19 Months 1500 Clock Hours/120.0 Credit Units

The electronics industry is one of the fastest growing fields today. The scientific and technological revolution is creating numerous career opportunities. The demand for people with technical skills is growing twice as fast as for any other group.

The Electronics and Computer Engineering Technology Program is designed to satisfy students' desire to learn a technical skill in a field that has experienced rapid growth. The curriculum explores both the fundamentals and advanced theory in electronics, integrated circuits, microprocessors and computer technology. Laboratory experience is an integral part of the program. Students also receive a background in the fundamentals of digital computers and hands-on experience with test equipment.

Graduates of the program are qualified for entry-level positions such as computer service technician, electronic laboratory technician, field service engineer, installation technician and electronic technician in communications, instrumentation, digital and computer electronics. Graduates are also qualified for a position as sales representative in the computer, electronics (including electronic office equipment) and microprocessing fields.

Upon successful completion of all areas of the 19-month program, a specialized associate degree in electronics and computer engineering technology will be awarded.

■ Program Outline

Course Number	Course Title	Clock Hours	Credit Units
DC Circuits and Applications Module			
EC101	Basic Electricity and Electronics	60	6.0
EC103	Mathematics for Electronic Circuits	30	3.0
EC104	Basic Electronics/DC Circuits Laboratory	<u>60</u>	<u>3.0</u>
	Total	150	12.0
AC Circuits and Applications Module			
ED101	AC Theory	60	6.0
ED103	Mathematics for AC Electronics Circuits	30	3.0
ED104	AC Circuits Laboratory	<u>60</u>	<u>3.0</u>
	Total	150	12.0
Semiconductor Devices and Applications Module			
EE201	Semiconductors	90	9.0
EE204	Semiconductors Laboratory	<u>60</u>	<u>3.0</u>
	Total	150	12.0
Transistors and Special-purpose Semiconductors Module			
EF201	Transistors and Special-purpose Semiconductors	90	9.0
EF204	Transistor Circuits and Amplifiers Laboratory	<u>60</u>	<u>3.0</u>
	Total	150	12.0
Microelectronics Module			
EG2011	Microelectronics	90	9.0
EG2041	Microelectronics Laboratory	<u>60</u>	<u>3.0</u>
	Total	150	12.0
Digital Electronics Module			
EH3011	Digital Electronics	60	6.0
EH3031	Numbering Systems and Computer Mathematics	30	3.0
EH3041	Digital Electronics Laboratory	<u>60</u>	<u>3.0</u>
	Total	150	12.0
Electronic Communications Module			
EI2011	Electronic Communications	90	9.0
EI2041	Electronic Communications Laboratory	<u>60</u>	<u>3.0</u>
	Total	150	12.0

Course Number	Course Title	Clock Hours	Credit Units
Microprocessors Module			
EJ301	Microprocessors	90	9.0
EJ304	Microprocessors Laboratory	<u>60</u>	<u>3.0</u>
	Total	150	12.0
Software and Advanced Technology Class Computers Module			
EK4011	Software and Advanced Technology Class Computers	90	9.0
EK4041	Software and Computer Laboratory	<u>60</u>	<u>3.0</u>
	Total	150	12.0
Computer Peripherals and Local Area Networks (LANs) Module			
EL4011	Computer Peripherals and Local Area Networks	60	6.0
EL4021	Professional Strategies	30	3.0
EL4041	Computer Peripherals and Local Area Network Laboratory	<u>60</u>	<u>3.0</u>
	Total	150	12.0
Program Total		<u><u>1500</u></u>	<u><u>120.0</u></u>

Major Equipment
Analog/Digital Trainers
Computers
Digital Multimeters
Function Generators
Frequency Counters
Logic Analyzers
Oscilloscopes
Power Supplies
Printers

■ Course Descriptions

EC101 Basic Electricity and Electronics

60 Clock Hours/6.0 Credit Units

This course is designed to introduce students to the field of electronics. Sources of electricity, atomic theory, and the principles and practices of fundamental direct current (DC) theory are taught. Concepts related to Ohm's law, resistance, series circuits, parallel circuits and series-parallel circuits for resistors are presented. The concepts of voltage drop and current will be presented using Kirchoff's laws, Norton's theorem and Thevenin's theorem. *Prerequisite: None*

EC103 Mathematics for Electronic Circuits

30 Clock Hours/3.0 Credit Units

This course introduces the concepts of electrical circuit network analysis. Students learn the arithmetic and algebraic functions required to use Ohm's law, Kirchoff's laws for current and voltage, the superposition theorem, Thevenin's theorem and Norton's theorem. *Prerequisite: None*

EC104 Basic Electronics/DC Circuits Laboratory

60 Clock Hours/3.0 Credit Units

This course introduces the safe use of hand tools and soldering techniques used in the electronics industry. Students construct laboratory projects involving series, parallel and series-parallel resistive circuits, and use various test instruments such as analog volt-ohmmeters, digital multimeters, signal generators and power supplies. Students complete a project demonstrating their skills and ability to integrate key concepts related to DC circuits. *Prerequisite: None*

ED101 AC Theory

60 Clock Hours/6.0 Credit Units

This course provides an introduction to the principles and applications of alternating current (AC). The theory of alternating current, inductive reactance (X_L), capacitive reactance (X_C) and the sine waves for voltage and current are studied. The phase relations among resistive-inductive (R-L) circuits, resistive-capacitive (R-C) circuits and R-L-C circuits in series and parallel circuits are analyzed. *Prerequisite: EC101, EC103, EC104*

ED103 Mathematics for AC Electronics Circuits

30 Clock Hours/3.0 Credit Units

This course introduces the principles and techniques for analysis of alternating current (AC) circuits. Students learn the algebraic and trigonometric functions required to perform analysis of AC electronic circuits using applicable laws of physics and vector analysis.

Prerequisite: EC101, EC103, EC104

ED104 AC Circuits Laboratory

60 Clock Hours/3.0 Credit Units

This course provides students with AC circuit applications. Students construct laboratory projects involving series, parallel and series-parallel resistive-capacitive, resistive-inductive, and resistive-capacitive-inductive circuits while using various test instruments such as analog volt-ohmmeters, digital multimeters, signal generators, oscilloscopes and power supplies to analyze these circuits.

Prerequisite: EC101, EC103, EC104

EE201 Semiconductors

90 Clock Hours/9.0 Credit Units

This course introduces the principles of semiconductors. Diode theory and related concepts are presented. Students learn about the operation of circuits involving diodes. In addition to circuits based on standard diode function, special diode circuits are discussed. Students learn the underlying principles of transistors and transistor circuits. Transistor circuits and their application in common circuits are discussed in depth. The concepts of biasing for bipolar transistors are also presented.

Prerequisite: ED101, ED103, ED104

EE204 Semiconductors Laboratory

60 Clock Hours/3.0 Credit Units

This course provides hands-on laboratory experience with the subjects presented in course EE201. Students construct and test circuits that show the principles of semiconductors, diode theory and related concepts. Students also test the operation of standard diodes and special-purpose diode circuits. Students test transistor circuits and their applications. The methods of biasing for bipolar transistors are also studied.

Prerequisite: ED101, ED103, ED104

EF201 Transistors and Special-purpose Semiconductors

90 Clock Hours/9.0 Credit Units

This course familiarizes students with special-purpose transistors and semiconductor devices. The course focuses on silicon devices such as silicon-controlled rectifier (SCR), triac and the silicon-controlled switch (SCS), bipolar transistor devices and applications. The students learn the basic principles and applications of electronic semiconductor oscillator and amplifier circuits. Basic diode and transistor theory is reviewed to provide a foundation for the course. *Prerequisite: ED101, ED103, ED104*

EF204 Transistor Circuits and Amplifiers Laboratory

60 Clock Hours/3.0 Credit Units

This course introduces students to laboratory experiments using transistor circuits and amplifiers that are covered in course EF201. Logical troubleshooting techniques are emphasized. Report writing skills are developed. *Prerequisite: ED101, ED103, ED104*

EG2011 Microelectronics

90 Clock Hours/9.0 Credit Units

This course introduces linear and digital integrated circuits. The operational amplifier is explored in depth, and the applications of the operational amplifier in DC, audio applications, summing amplifiers, difference amplifiers and other integrated circuits are presented. A review of diodes and transistors is included. *Prerequisite: EE201, EE204*

EG2041 Microelectronics Laboratory

60 Clock Hours/3.0 Credit Units

This course enables students to use laboratory experimentation to reinforce and apply concepts learned in course EG2011 and other courses. It includes demonstrations and experiments using integrated circuits, operational amplifiers and RF communications. *Prerequisite: EE201, EE204*

EH3011 Digital Electronics

60 Clock Hours/6.0 Credit Units

This course teaches students the principles of digital electronics. Areas covered include basic gates, logic symbols, truth tables, Boolean algebra, timing diagrams, logic families, integrated logic circuits, latches, flip-flops, counters, shift registers, A/D, D/A and memory. This information forms the building blocks for understanding microcomputer systems. *Prerequisite: EE201, EE204*

EH3031 Numbering Systems and Computer Mathematics

30 Clock Hours/3.0 Credit Units

This course introduces the binary, octal and hexadecimal numbering systems of a computer. Students practice addition and subtraction in all numbering systems, and multiplication and division in binary.

Prerequisite: EE201, EE204

EH3041 Digital Electronics Laboratory

60 Clock Hours/3.0 Credit Units

This course prepares students to work on digital electronic circuitry. The fundamentals include construction and using test equipment to troubleshoot basic and complex digital electronic circuits.

Prerequisite: EE201, EE204

EI2011 Electronic Communications

90 Clock Hours/9.0 Credit Units

This course covers principles and essential characteristics of communication electronics. Subjects include transmitters, receivers, the principles of communication systems, antennas, transmission lines, telephone systems, and data and optical communications.

Prerequisite: EE201, EE204

EI2041 Electronic Communications Laboratory

60 Clock Hours/3.0 Credit Units

This course enables students to use laboratory experimentation to reinforce and apply concepts learned in course EI2011 and other courses. It includes demonstrations and experiments in filters, amplifiers, oscillators, AM/FM generation and transmission, pulse amplitude modulation, pulse duration modulation, telephone circuits, modems and fiber optics.

Prerequisite: EE201, EE204

EJ301 Microprocessors

90 Clock Hours/9.0 Credit Units

This course presents an introduction to computers and microprocessor technology, including a comprehensive discussion of DOS. The course also explores the operation and troubleshooting of the 8088 microprocessor and the IBM PC XT system board. Support ICs, memory and I/O functions are discussed in detail.

Prerequisite: EF201, EG2011, EI2011

EJ304 Microprocessors Laboratory

60 Clock Hours/3.0 Credit Units

This course gives students basic knowledge of MS-DOS and introduces basic computer applications. Students configure and troubleshoot the IBM PC XT system board.

Prerequisite: EF204, EG2041, EI2041

EK4011 Software and Advanced Technology Class Computers

90 Clock Hours/9.0 Credit Units

This course introduces students to common application software, environments and operating systems. Students configure and troubleshoot advanced technology class computers.

Prerequisite: EJ301, EJ304

EK4041 Software and Computer Laboratory

60 Clock Hours/3.0 Credit Units

This course provides hands-on experiences that build on the concepts and skills presented in EK4011. Students install, configure and de-install various operating systems and application software. Students also perform hardware configuration and troubleshooting exercises.

Prerequisite: EJ301, EJ304

EL4011 Computer Peripherals and Local Area Networks

60 Clock Hours/6.0 Credit Units

This course provides an introduction to computer peripherals, digital communications and Local Area Networks (LANs). Students learn the basic operation, installation and set up of keyboards, video systems, mass storage devices, special I/O devices, printing systems, digital communication devices, and LAN software and equipment. Troubleshooting is also covered.

Prerequisite: EJ301, EJ304

EL4021 Professional Strategies

30 Clock Hours/3.0 Credit Units

This course helps prepare students for a job in the electronics marketplace. Topics include elements of writing, professional appearance and demeanor, and resume preparation. Students are expected to develop a business letter and resume during the course.

Prerequisite: EJ301, EJ304

EL4041 Computer Peripherals and Local Area Network Laboratory

60 Clock Hours/3.0 Credit Units

This course provides hands-on experience that builds on the concepts presented in EL4011 and EL4021. Students will set up, configure and troubleshoot computer equipment and LANs.

Prerequisite: EJ301, EJ304



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