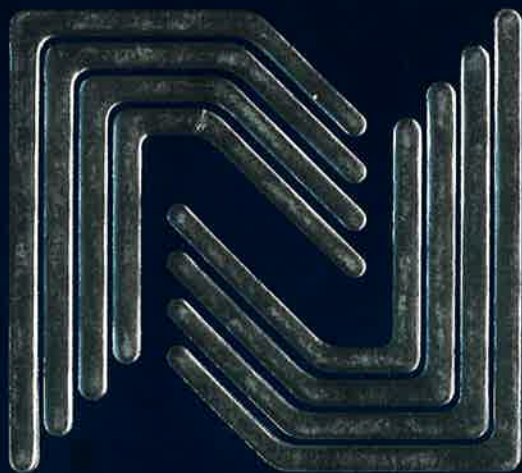


1985-86

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Student Catalog



National
Education
Center

TABLE OF CONTENTS

About National Education Centers	2
Educational Philosophy	2
Summary of Accreditation Criteria and Standards	3
Enrollment Procedures	4
Personal Interview	
Enrolling for Training	
Acceptance by the School	
Admission Requirements	5
Rules and Regulations	5, 6, 7, 8, 9
Personal Conduct	
Measure of Course Duration	
Attendance	
Tardiness	
Leave of Absence	
Grading Standards	
Make-up Work	
Dismissal Procedures	
Veteran Students	
Student Services	10
Housing Assistance	
Car Pooling	
Student Employment	
Tutoring	
Field Trips	
Special Lectures	
Financial Aid and Tuition Assistance	12
Voluntary Pre-Payment Plan	12
Privacy Act	13
Class Schedules	14
Tuition & Fees; Refund Policy	15
Graduate Placement Assistance	11
Programs Offered:	
Electronics	16, 17
Computer/Electronics Technology	18
Computer Programming	19, 20, 21
Course Descriptions	22, 23, 24
Administration	25

National Inst. of Tech. Campus
 5514 Big Tyler Road
 Cross Lanes, WV 25313
 (304) 776-6290

About National Education Centers

This school is part of a nationwide chain of National Education Centers across the U.S., owned and operated by National Education Corporation.

In an age where technology and training hold the keys to advancement for individuals and companies alike, National Education Centers, a division of National Education Corporation, has emerged as a leader in human resource development.

With headquarters in Newport Beach, California, and through schools across the U.S., National Education Centers provide vital, job-oriented training in high-growth, high-technology areas of business and industry.

From its beginning almost 30 years ago, National Education Corporation has grown to the point where it now encompasses numerous schools throughout the United States offering courses in such diverse areas as computer programming, drafting, electronics, avionics, aviation mechanics, flight training, fashion design and merchandising, accounting, auto and diesel repair, business administration, secretarial skills, medical and dental assisting, and radio and television broadcasting.

Great emphasis is placed on "hands-on" training. Students learn their skills using modern equipment similar to the kind they can expect to find on the job.



Educational Philosophy

It is the school's philosophy to provide various quality programs with an emphasis on hands-on training 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. Programs offered are relevant to employers' needs and are in areas which offer strong long-term employment opportunities to the school's graduates.

Accreditation Criteria and Standards

This school has voluntarily undergone an accrediting evaluation by a team of competent examiners including subject experts and specialists in occupational education and private school administration.

The accreditation standards and criteria ensure that this school:

- Accepts only qualified applicants.
- Has specific job-oriented training objectives.
- Offers organized, comprehensive training in current occupational practices.
- Provides necessary student services.
- Provides safe and sufficient facilities and equipment.
- Assures that graduates are qualified for employment.
- Has qualified administrators with records of integrity.
- Maintains permanent student records.
- Is financially sound.
- Is fair in all financial dealings.
- Has continuing programs of self-improvement.

Description of Facility

The facility consists of 18,000 square feet, equipped with central air and heat, the total capacity of this school is 1200 students. There is ample off street parking.

School History

National Education Center—National Institute of Technology Campus was originally a United Electronics Institute. The school was acquired by National Education Corporation in 1981 and the name was changed to National Institute of Technology as part of the Technical Schools Group. In 1983, the school's name was changed to National Education Center.

Accreditations, Approvals and Memberships

- Accredited by the Accrediting Commission of the National Association of Trade and Technical Schools.
- Authorized by the Board of Regents, West Virginia State Department of Education to grant associate degrees to graduates
- Authorized under Federal Law to enroll Nonimmigrant, Alien Students
- Eligible instruction under the Guaranteed Student Loan Program
- Eligible institution for National Direct Student Loan, Supplemental Education Opportunity Grant and PELL Grant Programs
- Provides training services for the State Department of Vocational Rehabilitation

Enrollment Procedures



It is suggested that application for admission be made as soon as possible in order to be officially accepted for a specific program and start date. To apply, 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.

Personal Interview

The school requires a personal interview with each applicant prior to acceptance. The school prefers that parent(s) or spouse also attend the interview. This gives both the applicant and family an opportunity to see the school's equipment and facilities and to ask specific questions relating to the school, curriculum and the career being considered. The personal interview also gives the school the opportunity to meet the applicant to determine acceptability for entering the school.

Enrolling for Training

The school follows an open enrollment system allowing individuals to apply up

to one year in advance of a scheduled class start. The following items are required to be completed at the time of application:

- Request for High School or College Transcript or G.E.D. Certificate.
- Enrollment Agreement (must be signed by parent or guardian if applicant is under 18 years of age).
- Financial Aid Forms, if applicant wishes to apply for Financial Aid.
- Student Health Notice for Allied Health programs (must be submitted by class start).
- Payment of Registration Fee.

Acceptance by the School

Once the completed Enrollment Agreement and items mentioned above have been submitted, the school reviews the Qualification Questionnaire and the applicant is informed of its decision within seven days. If an applicant is not accepted by the school, all fees paid to the school are refunded.

The school reserves the right to reject a student previously accepted if the items listed above are not successfully completed.

Admission Requirements

Applicants must be high school graduates or be able to qualify under the G.E.D. Testing Programs. It is the responsibility of the applicant to furnish proof of high school graduation or G.E.D. evaluation.

Exceptions:

If an applicant does not meet the Entrance Requirement but, in the opinion of the School Director or Education Director, can benefit from the training offered an exception can be made.

The student must then qualify for enrollment by passing the Entrance Test for the program in which they wish to enroll.

Rules and Regulations

Personal Property

The school assumes no responsibility for loss or damage to a student's personal property, or vehicle, nor loss by theft of any vehicle or any of its contents, in, on or adjacent to school property.

Weather Emergencies

The school reserves the right to close the school during a weather emergency or other "acts of God." Under these conditions, the student will not be charged with an official absence. Course material will be made up to ensure completion of the entire course.

Personal Conduct

Students are required to follow rules 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 Rules (includes student dishonesty, unprofessional conduct, use of profanity, insubordination, violation of safety rules, use of alcohol or drugs on school property, etc.). The student will be removed from Probation if, in the opinion of the School Director, the student demonstrates adherence to the Personal Conduct Rules.

Students Dress Code

Dress and grooming are expected to be appropriate and in keeping with acceptable business attire. Cleanliness and neatness are stressed. Many employers visit our campus to interview students for jobs, give lectures, etc. It is important that they gain a favorable impression of the appearance and conduct of the student body—otherwise, employers will hesitate to hire our graduates. As a student, you may have limited funds, so your wardrobe need not be expensive or extensive—simply APPROPRIATE. Please use good taste.



Rules and Regulations (Continued)

Listed below are items that are acceptable for classroom wear:

FEMALE Slacks, Skirts, Dresses,
STUDENT: Sweaters and Jackets.
Closed Shoes, Eye Protectors will be required when necessary.

MALE Slacks, Sport Shirts,
STUDENT: Sweaters and Jackets.
Closed Shoes. Eye Protectors will be required when necessary.

ITEMS NOT ACCEPTABLE for classroom wear: Shoes must be appropriate to the outfit. Sandals, Gym Shoes, etc. are not acceptable. Jeans, Army Pants, Carpenter Pants, Overalls, Bare Midriiffs, Bra Tops, Shorts, Tee Shirts, Warmup Suits and other similar attire are not acceptable.

Students dressed inappropriately will not be admitted to class and/or exams. Excessive abuse of this policy will result in Dress Code Probation.

Health

It is most important that you take proper care of your health so you can do your best in school. This means regular hours, plenty of sleep, sufficient exercise and nutritional food. If you are seriously ill or contract a communicable disease, you should stay home and recover but remember to notify the school immediately. All medical and dental appointments should be made after school hours.

Clothing and Personal Property

All personal property is the sole responsibility of the student and the school can assume no liability for loss. Mark your personal property clearly with your name and address.

Conduct Standards

Since you are preparing for a good job in business, your conduct should be that which is normally required in a business office. Use of profanity, alcoholic beverages or drugs on school property are all grounds for immediate suspension. No eating, drinking or smoking is permitted in the classrooms.

Measure of Course Duration

The school measures its programs in two ways, quarter hours of credit to allow comparability with other post-secondary schools and clock hours to allow measurement of the programs on this basis where required.

Quarter Hours are defined as follows:

For ngn-laboratory class periods, one quarter hour equals one clock hour per week for a 10 week term.

For laboratory class periods, one quarter hour equals two clock hours per week for a 10 week term.

For externship work experience, six quarter hours are assigned for 160 clock hours during a four week term.

Clock Hours are defined as follows:

A clock hour is one class period of approximately 50 minutes in length where lecture, demonstration, and similar class activities are conducted.

Changes to Courses, Schedules, Etc.

The school reserves the right to make changes in the equipment and curriculum to reflect the latest technology, to reset class schedules and hours, to consolidate classes, and change locations.

Rules and Regulations (Continued)

Attendance (Quarter System)

Students may be suspended from school if they do not maintain Satisfactory Attendance each quarter.

Students maintain Satisfactory Attendance if they attend 90% of the scheduled class time per quarter. Any student whose attendance falls between 80%—90% is placed on Probation. If the student's attendance falls below 80%, the student is subject to termination from the school.

NOTE: Under extenuating circumstances, a student may continue in the school if the attendance falls below 80%. This exception is made by the School Director and appropriate documentation for the exception is kept in the student's file.

Tardiness

Each student is expected to be in class on time. Students who enter class after the class begins or who leave early, shall be counted as tardy. Tardiness or leave earlies are recorded in quarter-hour increments and are included in counting absences.

Leave of Absence Policy

Under extenuating circumstances, students may be permitted to interrupt their training with a leave of absence (L.O.A.).

Approval for the leave of absence will be granted by the School Director.

Required Study Time

Outside study, apart from regular classroom work, is regularly required in order to successfully complete the required course assignments. The amount of time will vary according to the individual student's abilities. All assignments must be turned in at the designated time. Students are responsible for reading any study materials issued by their instructors.

Grading Standards

A—	100–90 . . .	4.0
B—	89–80 . . .	3.0
C—	79–70 . . .	2.0
D—	69–60 . . .	1.0
F—	59– 0 (Failing) . . .	0

Satisfactory Progress

Definition of Satisfactory Progress

To remain eligible for Financial Aid, students must continue to make acceptable academic progress.

The Director of Education or the Financial Aid Officer will provide students with specific Satisfactory Progress requirements that apply to the program in which they are enrolled.

Probationary Status

Students not meeting the Grading Standards will be placed on Probation. Probation will extend through one quarter.

Repeating of Course Work

To continue in the program, students who fail any course must retake those courses. If the student is required to repeat quarters of training due to academic failure, the length of his/her program will be extended up to an additional two quarters.

Rules and Regulations (Continued)

Appeal Process

If a student feels that there are extenuating reasons for failing to maintain satisfactory academic progress he or she may appeal this decision by petitioning the School Director, in writing, within five (5) days of the end of the quarter documenting, in detail, the extenuating circumstances. A decision on the appeal will be made in writing within seven (7) working days and the student so notified.

Reinstatement

A student who has been terminated by failing to maintain satisfactory academic progress may be reinstated through the Appeal Process. If the appeal is approved by the School Director, the student will be scheduled to return to school after remaining out of school for a minimum of one quarter. A student will not be eligible for financial aid during the Reinstatement Quarter.

Graduation Requirements

A student may qualify for graduation while on probation if, at the end of the Probationary Quarter, the student meets the Satisfactory Progress requirements.

A student is not eligible for graduation if:

1. The student does not have a cumulative grade point average of 2.0.
2. The student does not meet their financial obligations to the school.

Termination

A student may be terminated for failure to meet the Academic Standards.

Monitoring

Satisfactory Progress will be monitored by the institution at the end of each quarter. Notice of Probationary Status will be in writing.

Entrance Requirement

In addition to having a high school transcript or G.E.D. certificate, applicants may also be required to pass an entrance test in order to enroll in the school's programs.

Make-up Work

Students are required to make up all assignments and work missed as a result of absence. The instructor may assign additional make-up work to be completed for each absence; this will be assigned as outside work.

Tests missed because of an absence must be made up on the day the student returns to school unless other arrangements have been made by the instructor, with the school Administration's approval.

Program Transfers

Permission must be obtained from the School Director for a transfer from one program to another or for a requested change in schedule.

Transfer of Credit

Information concerning other schools which accept our credits toward their degree programs can be obtained by contacting the office of the School Director.

Rules and Regulations (Continued)

Credit for Previous Training

The school maintains a written record of the previous education and training of all students and appropriate credit is granted for previous education and training with the training period shortened proportionately and the person and interested agencies so notified. Anyone interested in credit for previous training should make a written request to the school at least one month prior to the start of the program to allow for evaluation of the request.

Student Progress Counseling

Educational objectives, grades, attendance and conduct will normally be reviewed on a regular basis. If a student is failing or not following attendance, conduct or dress rules, the student will be counseled. Failure to correct deficiencies may result in termination. Students desiring academic counseling are encouraged to contact a member of the Education Department.

Withdrawals

If a student finds it necessary to withdraw from school, it is the student's responsibility to immediately notify the school in writing.

Dismissal Procedures

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

1. Excessive Absences or Tardies
2. Failure to maintain Satisfactory Academic Progress
3. Cheating
4. Conduct that reflects poorly on the school or other students
5. Inability to meet financial obligations

Students to be terminated are notified in writing and may appeal the decision by filing a written appeal to the School Director within one week of Notice of Termination.

Exit Interviews

Students who discontinue their training for any reason are required to have an Exit Interview with the School Director before any formal processing of a request for leave or discontinuation may be granted.

Veteran Students

Absence and Tardiness rules are governed by V.A. regulations. For benefit purposes, absences and tardies may be computed in a manner different from that described in this catalog.

Student Services

Housing

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

Car Pooling

If you are interested in driving in a car pool or need a ride to school, see your Student Services Representative. You will receive the help you need to solve your transportation problem.

Student Employment

The school will assist students in locating part-time or full-time employment to aid in meeting their living expenses during their studies.

Employment assistance includes:

1. Counseling to prepare for an interview.
2. A list of specific job openings, when available.
3. Assistance with securing an interview.

Tutoring

Tutoring is available on an as-needed basis. To schedule tutoring, contact a member of the Education Department.

Field Trips

It is the school's belief that course material is greatly enhanced by student exposure to real life applications. Where appropriate, visits to industry or professional offices where interesting or different methods can be observed are frequently arranged.

Special Lectures

In order to expose students to various industry applications or current methods, guest speakers may be invited, as appropriate and as permitted by class schedules.

Student Services

Contact a member of the Education Department for other student services that may be provided by the school.

Handicapped Students

Handicapped students should make arrangements to meet with the Director prior to the start of class to review facilities for the handicapped.

Graduate Placement Assistance

Graduates are counseled regarding opportunities for job interviews. While no ethical school can guarantee employment, this school makes a sincere effort toward successful placement of its graduates.

During the last month of training, each student desiring job placement assistance is expected to make application to the Placement Director. Each student participates in proper interviewing conduct and procedures, preparing resumes and letters of introduction, prior to the school arranging placement interviews. Student referrals for job placement result from direct contact between the School Placement Officer and prospective em-

ployer representatives. Prospective employers may visit the school from time to time for recruitment purposes. Following graduation, or at any time thereafter, graduates may avail themselves of the school's Placement Assistance Program. The school will make a reasonable effort to satisfy the wishes of a graduate as to location and type of employment. The more flexible a graduate can be regarding initial employment, the easier it is for the school to assist in placement.

NOTE: Failure on the student's part to follow placement procedures may result in discontinuation of placement services.



Financial Aid and Tuition Assistance

This school is eligible to participate in several financial assistance programs. The largest program is the Guaranteed Student Loan (GSL). Those who qualify for assistance can borrow up to \$2500 under this program. This type of loan is secured through a financial institution (bank, savings and loan, etc.) and is guaranteed by the U.S. Government. Repayment is made according to standard terms set forth by the Government. We are also eligible to participate in the Parent Loan for Undergraduate Students (PLUS) loan program. Loan origination fees may be deducted from the loan by the institution making the loan as set forth by government regulations.

We are also eligible for the following Federal education assistance programs:

- PELL— previously Basic Education Opportunity Grant
- SEOG— Supplemental Educational Opportunity Grant
- NDSL— National Direct Student Loan



Additional information may be obtained by contacting one of our authorized representatives or by writing to the Director of Financial Aid at the School.

Those students interested in applying for school benefits from VA, BIA, Vocational Rehabilitation or Social Security should contact their local agency or write the School for further information.

Statement of Non-Discrimination

National Education Center does not discriminate on the basis of sex, age, physical handicap, race, creed or religion in admissions, counseling, training, placement employment or any other of its activities. The School's Director is the Title IX Coordinator and will receive any inquiries under the sex discrimination provisions of the Educational Amendments of 1972.

Handicapped Students

Handicapped students should make arrangements to meet with the Director prior to the start of class to review facilities for the handicapped.

Voluntary Pre-Payment 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.

Privacy Act

The school has established a policy for the release of student and/or graduate information. The policy is available upon request from the administrative offices.

Examination of Student Records

1. All students attending this postsecondary institution shall have the right to review their academic records, including grades, attendance and counseling. (Parental Financial information is excepted.)
2. Records are supervised by the School Director and access is afforded by School Officials for the purposes of recording grades, attendance and counseling, as well as determining financial aid eligibility.
3. Students may request a review by writing the School Director at the address set forth in the catalog and such review will be allowed at regular school hours under appropriate supervision. Students may also obtain copies of their records at a charge of \$0.10 per page.
4. Challenging the record for the purposes of correcting or deleting any of the contents must be done in writing stating fully the reason therefore. However, grades and course evaluations can only be challenged on the grounds that they are improperly recorded.
 - a. The instructor and/or counselor involved will review the written challenge and, if desirable, meet with the student and then make a determination to retain, change or delete the disputed data.
 - b. Should further review be requested by the student, the School Director will conduct a hearing at which the student shall be afforded 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.
 - c. A copy of the challenge and/or a written explanation respecting the contents of the student record will be included as part of the student's permanent record.
5. "Directory Information" showing student's name, address, telephone, birth date and place, program undertaken, dates of attendance and certificate awarded may be provided to third parties by the school, unless the request to omit such information is presented, in writing, within 10 days of date of enrollment.
6. As a postsecondary educational institute, parental access to student's records will be allowed without prior consent if the student is a dependent as defined in Section 152 of the Internal Revenue Code of 1954.

Schedule of Classes

Class Times:

Days — 8 a.m. — 5 p.m.

(Monday through Friday)

Evenings — 6:00 p.m. — 11:00 p.m.

(Monday through Thursday)

1986 Winter Quarter

Start **End**

1/20/86 Monday . . . 4/11/86 Friday

Quarter Break — 4/14, 15, 16, 17, 18
5 Days

1986 Spring Quarter

Start **End**

4/21/86 Monday . . . 7/11/86 Friday

Quarter Break — 7/14, 15, 16, 17, 18
5 Days

1986 Summer Quarter

Start **End**

7/21/86 Monday . . . 10/10/86 Friday

Quarter Break — 10/13, 14, 15, 16, 17
5 Days

1986 Fall Quarter

Start **End**

10/20/86 Monday . . . 1/16/87 Friday

Quarter Break — None

1986 Holidays

Martin Luther King Day 1/20

President's Day 2/17

Spring Holiday 3/28

Memorial Day 5/26

Independence Day 7/4

Labor Day 9/1

Thanksgiving 11/27, 11/28

Christmas 12/22, 23, 24, 25, 26,
1/1, 1/2,

Tuition and Fees

(Includes Books & Supplies)

COURSE	MONTHS	CLOCK HOURS	Length of Course			TOTAL COURSE PRICE
			QUARTER HOURS OF CREDIT	REG FEE	TUITION	
Electronics Engineering Technology	24	1920	120	\$100	\$9,600	\$9,700
Computer Programming	18	1440	93.5	\$100	\$8,100	\$8,200
Computer/Electronic Technician	18	1440	93.5	\$100	\$7,200	\$7,300

Refund Policy

Refunds will be calculated from the date of withdrawal, which is the last date of actual attendance. If a student does not start classes, all tuition paid will be refunded. Refunds will be computed as follows:

Withdrawal during first week...
Amount retained by school \$350.00.

Withdrawal after first week but within 25% of course... School retains 25% of total tuition plus \$150.00.

Withdrawal after 25% but within 50% of course... School retains 50% of tuition plus \$150.00.

Withdrawal after 50% of course...
School retains 100% of tuition.

For courses longer than 1 year (12 months) in length, the cancellation and settlement policy shall apply to the stated course price attributable to each school year.

All of the stated course price attributable to the period beyond the first year will be refunded when the student terminates during the first year.

All monies due the applicant or student shall be refunded within 30 days after cancellation or termination.

Refunds to students eligible to receive benefits under the G.I. Bill will be computed in accordance with applicable refund provisions.

Miscellaneous Fees: The School will retain all miscellaneous fees for each quarter started. All fees for quarters beyond the quarter of withdrawal shall be refunded in full.

Books and Supplies:

The cost of books and supplies is included in tuition.

Electronics

The electronics industry is one of the fastest growing fields today. Employment opportunities in electronics are exceptionally good. Advances in technology steadily create additional jobs and opportunities for advancement in this field.

National Education Centers' Electronics Programs provide the students with knowledge and skills necessary to gain employment as Electronic Technicians. Modern training methods and equipment provide the students with the background needed to keep pace with exciting changes taking place in this field. National Education Centers' Electronics Programs include ample "hands on" training on state-of-the-art equipment.

Students learn to use meters, oscilloscopes, signal function generators, analog, digital and microprocessor trainers and computers in the course of instruction.

Average class size is 30 students.

Electronics

EQUIPMENT LIST

- Audio Frequency Generators
- Capacitance Meters
- Computer Training Systems
- Experiment Boards
- Frequency Counters
- Microprocessor Training Devices
- Pulse Generators
- Signal Generators
- Single and Dual Trace Oscilloscopes
- Volt-ohm Meters

Electronics (Continued)

ELECTRONICS TECHNOLOGY— Associate Degree Program

OBJECTIVE:

This program provides students with the skills and knowledge needed to gain entry-level employment in the electronics industry. Upon completion of this program, students will be able to analyze, repair, or design electronic circuits with the assistance of test equipment. Students will learn solid state and digital electronics, microprocessor technology, computer electronics, industrial electronics, and data communications.

	QUARTER CREDITS
EL1 Introduction to Electronics	
Reading for Electronics 101	5
Math for Electronics 102	5
Introduction to Electronics 103	2
Fabrication Skills 104	3
EL2 Basic Electricity & Electronics	
Electronics Theory 111	7
Electronics Lab 112	5
Applied Mathematics 113	3
EL3 Semiconductors: Circuits & Devices	
Electronics Theory 121	8
Electronics Lab 122	4
Applied Mathematics 123	2
Technical Drawing Lab 124	1
EL4 Microelectronics: Devices & Applications	
Electronics Theory 131	8
Electronics Lab 132	5
Technical Writing 133	2
EL5 Digital Circuits & Devices	
Electronics Theory 241	15
Electronics Lab 242	5
EL6 Microprocessor Technology	
Electronics Theory 251	10
Electronics Lab 252	5
EL7 Computer Electronics	
Computer Electronics 262	10
Computer Lab 263	5
EL8 Industrial Electronics	
Industrial Electronics 274	9
Industrial Lab 275	5
Professional Career Development TE 279	1
	<hr style="width: 100%; border: 0.5px solid black; margin-bottom: 5px;"/> 120

Upon successful completion of all areas of the 24 month program, an Associate Degree in Electronic Engineering Technology will be awarded.

Computer/Electronic Technology

OBJECTIVE:

The computer/electronic technician's course was developed to meet the growing demand for trained electronic personnel to fill entry level positions in the computer and allied industries. Employment opportunities in the following areas are within the scope of our graduates: Electronic Technician, Industrial Maintenance Technician and Computer Board/Systems Repair technician. The nature of each position may include the assembly, installation and repair of electronic products.

Each class day will be divided into approximately 60% lecture and 40% lab. The lab is an extension of the theory in which the students actually construct and test the circuits discussed in the lecture, although the emphasis is placed primarily on testing and logical troubleshooting procedures, using state of the art equipment. This is a practical course where theory and mathematics are confined to what is actually required to do the job.

COURSE	CONTACT HOURS	QUARTER CREDITS
QUARTER I		
Electronic Principles		
Electronic Theory 121	144.0	12
Laboratory 121	96.0	4
QUARTER II		
Analog Procedures		
Electronic Theory 122	144.0	12
Laboratory 122	96.0	4
QUARTER III		
Digital Principles		
Electronic Theory 221	144.0	12
Laboratory 221	96.0	4
QUARTER IV		
Microprocessors and Applications		
Electronic Theory 222	144.0	12
Laboratory 222	96.0	4
	960.0	64

Upon successful completion of all areas of the 12 month program a certificate of completion will be awarded.

Computer Programming

With the advent of the age of microelectronics, computers are now in everyone's lives—to stay. In today's world of business, the computer has become the common denominator of efficient business, with information systems personnel contributing daily to the vital decisions in business operations. There is virtually no aspect of our economy that does not depend either directly or indirectly on computers and the people behind them. Computers must be programmed by well-trained, logical, and creative people who are familiar with a variety of languages and business situations. Our training provides skill courses and laboratory work to produce the professional for entry into this growing field. This can truly be called "the 21st century" career.

Computer Programming

EQUIPMENT LIST

IBM System 34-Mini Computer System using an F-25 Printer

Computer Programming (continued)

BUSINESS COMPUTER PROGRAMMING Associate Degree Program

OBJECTIVE:

The Business Computer Programming Course is designed to prepare the student for an entry-level position in data processing as a junior programmer or operator. The principles discussed in lectures are reinforced with hands-on training on the IBM System/34 computer located in the classroom at the school.

COURSE	CONTACT HOURS	QUARTER CREDITS
QUARTER 1		
BASIC 101 ✓	180	11.25
Data Processing 101 ✓	60	5.0
QUARTER 2		
RPG II 102	180	11.25
Business Math 101 ✓	60	3.75
QUARTER 3		
Advanced RPG II 103	240	15.0
QUARTER IV		
COBOL 104	180	11.25
Business Systems and Applications 101 ✓	60	5.0
Lab 104		
QUARTER V		
Advanced COBOL 201	200	12.5
Technical Writing 101	40	3.25
Lab 201		
QUARTER VI		
Systems Analysis 201	200	12.5
Communications 201	40	3.25
Lab 202		
TOTAL	1440	93.5

Upon successful completion of all areas of the 18 month (1440 clock hour) program, an Associate in Business Computer Programming Degree will be awarded.

Computer Programming (continued)

Business Computer Programming

QUARTER ONE:

- A. This course is designed for students beginning to study programming and includes BASIC, computer systems, and the use of IBM System-34 peripherals.

QUARTER TWO:

- A. This quarter has two objectives:
 1. The first is an introduction to structured COBOL.
 2. The second objective involves the study of business mathematics.

QUARTER THREE:

- A. This course is designed to provide the student with an understanding of RPGII and IBM System-34 utilities.

QUARTER FOUR:

- A. This quarter is a study of advanced COBOL programming.
- B. The student will also have an understanding of the role of the computer in business and basic accounting principles.

QUARTER FIVE:

- A. This purpose of this quarter is to present advanced RPGII.
- B. In addition, the student will learn to operate the system console and learn to use data file utility.

QUARTER SIX:

- A. This final quarter will provide the student with exposure to business systems analysis.
- B. Technical communication skills will be covered.
- C. And the student will be responsible for conducting an analysis of a business situation, preparing programs for the business and presenting to the class an oral presentation of the analysis.

Course Descriptions

Electronics Engineering Technology

Reading for Electronics 101

5.0 Credits

Students will study essential terminology as it relates to electronics theory. In addition, this course provides inferential reading skills for analyzing scientific information and develops the student's ability to think analytically. Course materials include workbooks, interactive video, and industrial data sources.

Math for Electronics 102

5.0 Credits

This course provides an applied approach to introducing math skills for basic electronics. Students in this course are taken through an introduction to algebra with the use of workbooks, interactive video, and lecture. A focus for the course will be the applications of these skills in electronics.

Introduction to Electronics 103

2.0 Credits

This survey course of electronics provides the student with an overview of the electronics industry. From the discovery of electricity to today's state-of-the-art computers, students will study advancements, applications and trends in the electronics industry. Course instructional materials include hand-outs, video-tapes, lecture, guest speakers, and field trips.

Fabrication Skills 104

3.0 Credits

Students will gain "hands-on" experience in soldering and desoldering techniques. Additional projects will teach electronic fabrication and construction and use of basic electronic test equipment will be taught. Along with fabrication students will learn component identification and referencing.

Electronics Theory 111

7.0 Credits

A study of the principles of direct and alternating current. Included are the effects resistors, capacitors and inductors have on voltage, current and power when used in various circuits.

Electronics Lab 112

5.0 Credits

Students become familiar with and use tools and test equipment to construct and analyze basic electrical and electronic circuits. Personal safety and the proper use of tools and equipment is stressed. The equipment used in this course includes: soldering iron – pencil type, "breadboards", multimeter (volt-ohm-milliammeter), oscilloscope, and power supply.

Applied Mathematics 113

3.0 Credits

A review of basic mathematics as applied to the laws and formulas used in electronics. Students become proficient in the use of a scientific calculator to complete electronic formulas.

Electronics Theory 121

8.0 Credits

A comprehensive study of solid state principles and circuits. The students are introduced to diodes, transistors and other solid state electronic devices and learn how resistors, capacitors, conductors, rectifiers, amplifiers and oscillators work together to control electrical current. Basic power supply and amplifier circuits are also studied.

Electronics Lab 122

4.0 Credits

Circuit analysis and troubleshooting techniques are learned in the construction and calibration of a radio receiver. Students learn to read and draw electronic symbols (schematics). The equipment used includes soldering iron – pencil type, solderless prototype boards (breadboards), scientific calculator, multimeter (VOM-volt-ohm-milliammeter), oscilloscope, power supply, alternating current power source, RF signal generator, transistor radio receiver kit and drawing set.

Applied Mathematics 123

2.0 Credits

Students review and use the basics of algebra to solve electronic equations. Logarithms and vector additions are used to understand and analyze the operation of electronic components and circuits.

Technical Drawing Lab 124

1.0 Credit

Students learn to read and draw electronic symbols (schematics), and draw electronic circuit and block diagrams.

Course Descriptions (Continued)

Electronics Theory 131 8.0 Credits

This course is an introduction to the field of miniature electronics made possible by the development of integrated circuits. The difference between discrete components and integrated circuits and how this allows the size of complex electronic circuits to be greatly reduced is studied. This course also serves as a transition between analog and digital electronics.

Electronics Lab 132 5.0 Credits

Students study the construction and operation of various specialized microelectronic devices. The equipment used includes soldering iron—pencil type, solderless prototype boards (breadboards), scientific calculator, multimeter (VOM-volt-ohm-milliammeter), dual trace oscilloscope, direct current power supply, and analog/digital electronics trainer.

Technical Writing 133 2.0 Credits

Students learn to organize and write comprehensive lab reports using proper sentence structure and grammar.

Electronics Theory 241 10.0 Credits

A study of digital electronics including the construction and operation of digital electronic circuits and devices, binary math, logic gates, multi-vibrators, flip-flop, shift registers and LED displays. Digital analog and analog-to-digital conversion are also covered.

Electronics Lab 242 5.0 Credits

Digital electronic circuits are constructed, studied and analyzed on a specialized training device. Equipment used includes direct current power supply, dual trace oscilloscope and analog/digital electronics trainer.

Electronics Theory 251 10.0 Credits

Microprocessors are the key elements in modern computers. Advances in microprocessor technology have allowed computers to become smaller, faster and more efficient. Students explore the theory, construction, and operation of microprocessors, and as a microprocessor is a programmable logic device, students learn introduction to programming in machine and basic languages. Microprocessor applications other than to computers are also studied.

Electronics Lab 252 5.0 Credits

Students learn the operation of microprocessors by conducting experiments on a Motorola 6800 series microprocessor trainer. Equipment used is a dual trace oscilloscope in addition to microprocessor trainer.

Computer Electronics 262

10.0 Credits

This quarter provides a comprehensive study of computers and computer peripherals which includes the theory and operation of card punchers, card readers, cassettes, data communications equipment, disk packs, floppy disks, line printers, magnetic recording devices, magnetic tape stations and modems. Basic programming is extensively taught along with an introduction to several business languages.

Computer Lab 263 5.0 Credits

The students breadboard digital circuits that are representative of the individual sections of the computer. Hands-on experience with computer hardware is achieved through extensive examination and troubleshooting of on-site computers. During the last half of this phase, the student selects a project which they individually must conceive, research, design, prototype, debug and present to their class.

Industrial Electronics 274 9.0 Credits

This quarter is an introduction to the application of electronics in the industrial environment. With the use of all previously learned material, the student studies industrial systems and transducers. All previously studied material will be applied to motor controls, conversion devices, proximity controls, sequence timing, induction and dielectric heating, temperature controls, etc. Numerical controlled machines and programmable controllers are taught in detail. Television concepts are also taught as needed for the development of CRT terminals. Several other terminals are also taught.

Course Descriptions (Continued)

Industrial Lab 275 5.0 Credits

Industrial circuits and systems are constructed during this phase utilizing the technologies previously learned. Logical test procedures and trouble-shooting techniques are emphasized throughout this quarter. Practical experience is also gained through exposure to on-site computer peripherals.

Professional Career Development 279 1.0 Credit

Students learn to make effective oral and written presentations. Students also learn to properly complete letters of application, resumes, follow up and "thank-you" letters in preparation for seeking employment.

Computer/Electronic Technology

C/ET 121 Basic Electronic Principles

A study of the fundamental principles of electrical conduction which includes the effects of series and parallel resistors, capacitors and inductors on voltage, current and power. The principles of magnetism and electromagnetism will be explored. The operating characteristics of rectifiers will be studied and applied to power supply circuits. Additionally, the student will be exposed to soldering techniques and an introduction to solid state principles and devices.

C/ET 121 Laboratory

Resistors, capacitors, and inductors are utilized to construct DC and AC circuits, and then pertinent voltage, current and power measurements are performed. There are also laboratory projects to demonstrate the principles of electromagnetism. Halfwave, fullwave, bridge and double power supplies are constructed. Appropriate test equipment, such as the oscilloscope and the multimeter are used either to troubleshoot or analyze circuit conditions.

C/ET 122 Analog Principles

A comprehensive study of solid state circuits which includes the static and dynamic characteristics of low and high frequency amplifiers. The operation and function of basic electronic circuits such as AF amplifiers, RF amplifiers detectors, AGC circuits, various relaxation oscillators, FET amplifiers regulated power supplies, high fidelity sound systems and FM stereo multiplex systems will be covered. In addition, the student will study operational amplifiers as well as solid state devices: SCRs, UTs, diacs and triacs.

C/ET 122 Laboratory

A solid state superheterodyne receiver is constructed which affords the student an opportunity to test and examine many of the circuits that are discussed in lecture. Besides the circuits in the radio, various other amplifiers are constructed and pertinent measurements are performed. Experiments with specialized solid state devices, such as UJTs, SCRs, diacs and triacs. Practical troubleshooting techniques that utilize the signal generator, oscilloscope and VOM are emphasized this quarter.

C/ET 221 Digital Principles

This quarter includes a study of the building blocks of digital electronics which encompasses basic gates, encoders, decoders, flipflops, counters shift register, multiplexers, demultiplexers, digital readouts, basic arithmetic units, and digital integrated circuits. Also included is a further study of linear ICs including op amps, timers, audio output ICs. Concepts of IC times analog to digital and digital to analog techniques are also studied.

C/ET 221 Laboratory

The digital circuits discussed in lecture are constructed during lab with integrated circuits. Also various circuits utilizing both analog and digital concepts such as analog and analog to digital converts will be constructed and tested.

Course Descriptions (Continued)

C/ET 222 Microprocessors

The theory and operation of microprocessors is thoroughly examined. Several families of microprocessors are examined. The hardware and software implications of using different IC families are compared. All the necessary support hardware is also taught such as memory devices and architecture, drivers, decoders, executive programs. An introduction to computer system architecture including the interaction of the computer and its peripherals, together with the television concepts as needed for the development of CRT terminals.

C/ET 222 Electronics Laboratory

During this phase, the students will write machine language programs, enter and debug these programs and construct many interfaces as they learn microprocessors. Hands-on experience with RAMS, ROMS and other microprocessor support chips will enable the student to understand better the microprocessor based systems that will be encountered in industrial electronics and computers.

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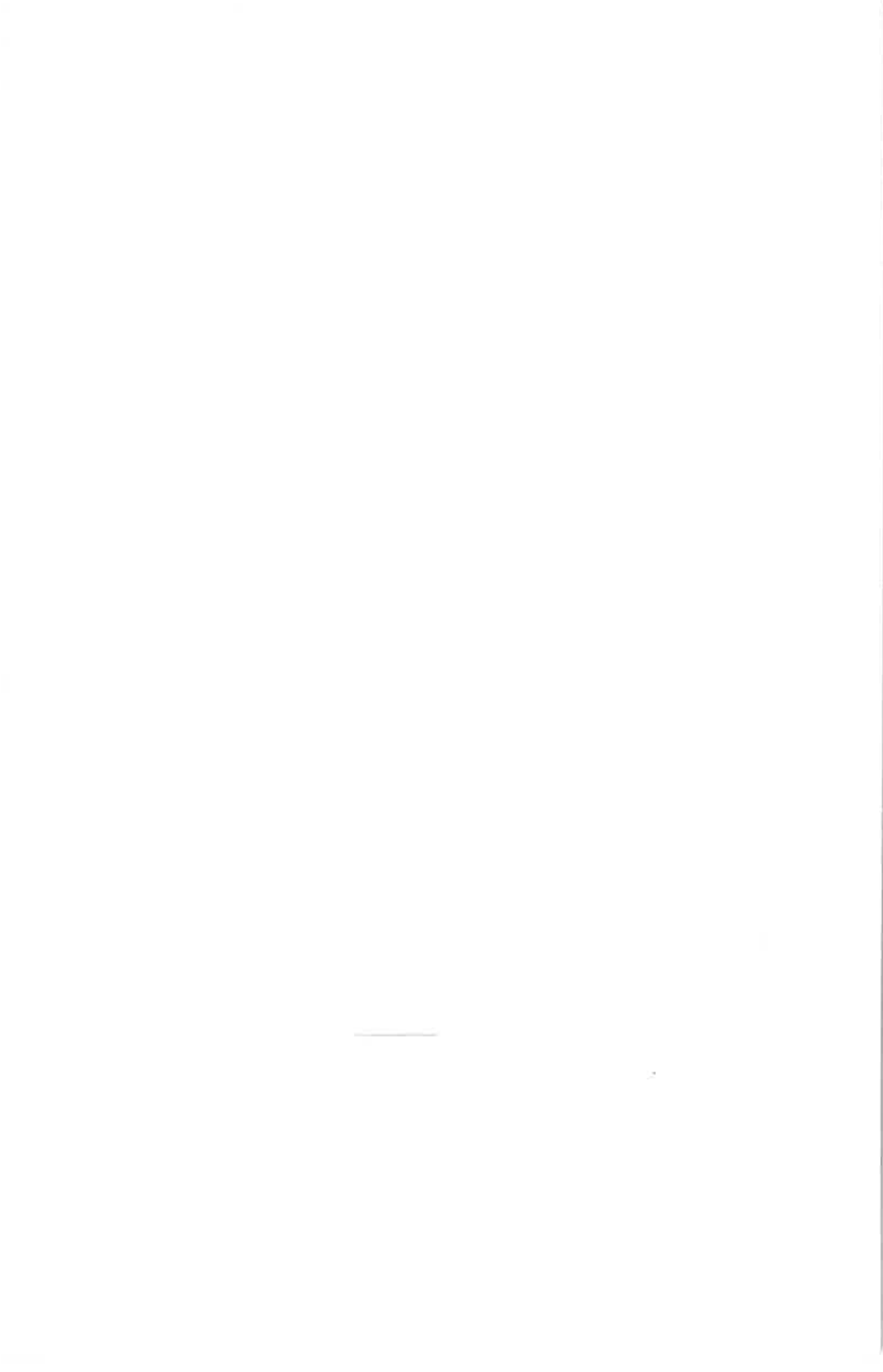
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