CINCINNATI COOPERATIVE SCHOOL OF TECHNOLOGY

A POST GRADUATE DIVISION
OF
CINCINNATI PUBLIC SCHOOLS

CINCINNATI PUBLIC SCHOOLS

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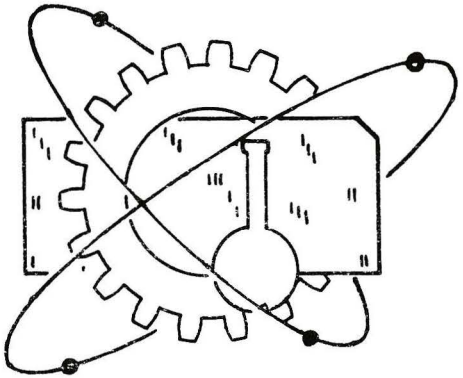
CINCINNATI COOPERATIVE SCHOOL OF TECHNOLOGY



BUSINESS DATA PROCESSING TECHNOLOGY

MECHANICAL DESIGN

GRAPHIC COMMUNICATIONS TECHNOLOGY

SALES-MARKETING TECHNOLOGY

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CINCINNATI COOPERATIVE SCHOOL OF TECHNOLOGY

3520 Central Parkway ■■■■ Cincinnati, Ohio 45223

681-6150 (Ext. 75)

Foreword

Technical education for high school graduates is growing and expanding rapidly. The need for technicians far exceeds the supply, and it is estimated that as many as ten or more technicians are needed for each professional worker in certain fields of employment.

Technical training opens the door of opportunity for thousands of young people each year. Technical jobs are excellent stepping stones to hundreds of non-licensed professional jobs in business and industry; and many of the licensed professions come within much easier reach of the technician if he (she) is willing to continue his (her) formal education beyond technical school.

Cooperative education, whereby work and study are combined to further a learning goal, was originated at the college level by the University of Cincinnati in 1907. In 1910, Cincinnati's Woodward High School became the first high school in the world to offer this opportunity to its pupils, and the co-op opportunity has been available to Cincinnati Public School pupils in some form each year since that time.

The Cincinnati Cooperative School of Technology combines technical and cooperative education to provide high quality preparation for employment at the least cost, and with the greatest convenience to the students. The subjects and programs have been carefully developed by advisory committees of persons from Cincinnati business and industry who know the needs. These employers have heartily endorsed the school and its motives, and are anticipating a valuable contribution to the local work force from this new educational unit. The instructional staff has been carefully selected from among persons having broad experience in technical-professional work as well as having had superior formal education.

We commend the members of our staff and the advisory committees who have planned these technical programs. The Cincinnati Public School System is happy to offer this opportunity to you.

Wendell H. Pierce
Superintendent
Cincinnati Public Schools

April 1, 1966

A. RASCHE

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Objectives

Technical education is a two-year post-high school program of preparatory instruction in communication skills, technical knowledge, mathematics, leadership skills, science, and manipulative arts. This training prepares individuals for entrance into employment in occupations which are defined as technical by industrial, scientific, business and government agencies. Technical education is not designed to prepare for immediate entrance into professional jobs or for those who are seeking two years of college work for immediate transfer toward a Baccalaureate degree, although these programs will serve the aforementioned purposes quite often for those who do above average work in school and on the job. Thousands of technicians upgrade themselves into professional jobs each year by way of further education.

The Cincinnati Cooperative School of Technology has designed its programs to take maximum advantage of existing technical knowledge in the form of written materials, an experienced instructional staff, and the Cincinnati business-industrial community by way of on-job experience. Upon completion of any one of these programs, the technician is trained to collect data, make computations, perform experiments, prepare reports, work with others, and to use all the resources such as handbooks, references, or equipment pertaining to the respective technology. Most importantly, he (or she) will have gained one or two years in the competition for good jobs because of cooperative work experience in the respective technical field.

Graduation

Students completing any one of the respective programs will be granted a Certificate of Proficiency in the area of study. Upon request, a transcript of the student's record will be forwarded to any employer or college. Evaluation placed on the record is entirely in the hands of the reviewer.

General Information

The academic year is divided into four 10-week terms in addition to a 10-week summer term. Each 10-week term consists of 45 teaching days and two days are devoted to final term examinations. All students are in school or at work twelve months each year.

Students spend 25 to 30 hours per week in classrooms and laboratories. Outside study and preparation requires 10 to 20 hours per week. Students devote full-time to classroom work for a 10-week term which is followed by 10 weeks on a cooperative job.

Admission Requirements

Applicants must meet the following qualifications:

1. High school graduation in the upper two-thirds of the class or equivalent standing in terms of aptitude and achievement tests.
2. Presentation of satisfactory recommendations.
3. Satisfactory scores on any required entrance examinations.
4. Physical qualifications to perform acceptably in field of training selected.

How to Apply

Application must be made upon a standard form which may be obtained by telephoning Cincinnati Cooperative School of Technology (681-6150 — Ext. 43) or from high school counselors. The high school counselor will send a transcript of the high school record upon request, and Cincinnati Cooperative School of Technology must have the high school grades to process the application. An enrollment fee of $10 must accompany each application. This fee covers registration expenses at the time of enrollment and is not refundable. Personal interviews will be arranged and entrance test administered by appointment at any time during the year.

Student Expenses

Approximately two-thirds of the cost of operating the Cincinnati Cooperative School of Technology is provided from Federal funds under the National Defense Education Act of 1958. The remaining cost is shared between the Cincinnati School District and the students in the case of students living in the city district. Since Ohio school districts cannot subsidize the education of non-residents, students living outside the Cincinnati School District must pay a higher rate.

Tuition: (Per in-school term)	
Residents	$100
Non-residents	125
Materials and Books: (approximately)	25

All students must register for cooperative work experience during alternate 10-week terms and pay a $5 fee at the time of registration. This fee covers part of the cost of coordinating and evaluating co-op jobs.

Refunds

Enrollment and co-op fees are not refundable. Tuition refunds will be made on the following basis:

During first week of term	80%
Second week	60%
Third week	40%
Fourth week	20%

No refunds will be made after the fourth week.

Scholarships and Other Financial Aids

The opportunity to hold a cooperative job and attend classes on a 10-week alternating basis provides the best possible situation for those students who require financial assistance. In addition, it is expected that a limited number of tuition scholarships can be made available to qualified students.

Funds are available from Federal sources for part-time employment of needy students during the in-school term to provide for incidental expenses.

Grading System

Academic standards are maintained at a high level. The following system is used to evaluate student achievement in each subject:

Grade	Quality	Points
A	Superior	4
B	Good	3
C	Average	2
D	Poor	1
F	Failing	0
Inc.	Incomplete	
Wd.	Withdrawn	

Grade Reports

Grade reports will be mailed to the student's home at the end of each term. Mid-term grades of students who are failing will be reported to the school administration and special attention will be given those students to assist them in improving.

Dismissal

A student will be dismissed from Cincinnati Cooperative School of Technology if his accumulative point-hour ratio is below any of the following levels:

After one term	$1.00
After two terms	1.25
After three terms	1.50
After four terms	1.75
After five terms	1.90

Work Placement

Students at Cincinnati Cooperative School of Technology are selected on the assumption that they will be immediately employable in a beginning job, hopefully related to the technology being studied. While such employment may be only of wage earning value at the very outset, it is expected that the student will merit more challenging job assignments very soon with the same employer, using the newly-acquired technical knowledge.

Every effort will be made to place early enrollees on work-experience jobs during the summer months prior to the opening of the fall term. The employer advisory committees representing each of the respective technologies have indicated willingness to assist the school by providing work-experience jobs to the extent that employment conditions make this possible at any given time.

Students are encouraged to locate employment for themselves within a framework which serves the purposes of technical education. Students accepting co-op employment which does not serve the intended purpose as determined by the school administration may be asked to withdraw from the program. A liberal interpretation of this regulation may be exercised during the early stages of enrollment, but all students will be expected to find or accept employment directly related to the technology being studied after the second term in school.

While Cincinnati Cooperative School of Technology is optimistic about the placement of all its students on cooperative work jobs, there can be no absolute guarantee that this can be done in every instance. Entrance into employment and continued employment depends on what the individual student can offer to employers. Students who have not demonstrated employability in some form by the end of the second term in school will be advised to discontinue the program.

There is indication that some employers are interested in employing young people and "placing" them in school on the 10-week alternating basis.

Buildings and Facilities

Cincinnati Cooperative School of Technology shares facilities with Courter Technical High School at 3520 Central Parkway. This structure and equipment cost more than $7,000,000 in 1953. The expansive facilities provide for the best in technical education including graphic communications (printing), data processing, sales-marketing, and drafting as well as many other technologies. The data processing equipment alone, complete with modern computer, represents an investment of more than 1/4 million dollars — the equivalent of many universities and exceeding such resources in most colleges. The facilities for teaching printing technology are the most extensive in the mid-west.

Excellent lunchroom facilities are available to technical students at low cost as well as library, spacious grounds, and parking.

Student Class Schedules

Classes may be scheduled at any time between 8:30 a.m. and 5:00 p.m. The average daily load will include five to six hours of instructions. Schedules for individual students are compacted to avoid undue delays between class assignments and to avoid long hours on campus unnecessarily.

Automobile Regulations

Adequate parking facilities adjacent to the school building are provided. Students should park in designated areas only and should observe proper driving courtesy. It is necessary for students to obtain an automobile registration sticker.

Implications for Draft Status of Young Men

Cincinnati Cooperative School of Technology will report the enrollment status of all male students to the Hamilton County (or other appropriate) Draft Board. Draft status for individual students can, of course, be determined only by Selective Service authorities in each respective instance, but full-time students doing satisfactory work in other similar technical schools are generally being classified 2S.

Business Data Processing Technology

The occupations in the data processing and computer technology field are very new — as new as the electronic computer. The highest position of skill a person can attain in the effective utilization of these machines is that of a computer programmer.

Computers can only follow carefully prepared instructions for doing each job. It is the programmer who prepares these step-by-step instructions.

Every problem that is processed on a computer must first be carefully analyzed. Plans are made for processing the data in the most efficient manner. There are usually several possible ways of obtaining the correct answer to any given problem, some of them more direct than others.

Normally a programmer does the preliminary analysis and planning. Once the general plans have been completed, the programmer is ready to start the job of writing the "program," or detailed plan for processing the data on the computer. Exactly how he does this depends on the kind of computer used and the nature of the problem being programmed.

The programmer usually starts his job by conferring with professional staff members who are in a position to furnish him with detailed information about the subject matter of the problem. This done, he makes a flow chart, or diagram, showing the order in which the computer must perform each operation; for each operation he prepares detailed instructions, or "routines." These routines, once they have been transferred to the computer's memory, tell the machine exactly what to do with all of the facts and figures associated with the problem.

A comparatively simple problem can be programmed for a computer within a few hours. A program which deals with a complex problem or is designed to produce many different kinds of information may require thousands of routines and a year or more of preparation.

Business Data Processing Technology Curriculum

			Cl.	Lab.	Cr.
First Term	1512	The Structure of Economics	2½	0	2
	1001	Communication Skills I	5	0	4
	1701	Basic Unit Record Laboratory	0	5	2
	1843	Accounting I	5	0	4
	1702	Introduction to Data Processing	2½	0	2
	1101	Mathematics for Business Data Processing I	5	0	4
			20	5	18
Second Term	1820	Cooperative Employment Program			
Third Term	1513	Economic Reasoning	2½	0	2
	1002	Communication Skills II	2½	0	2
	1703	Business Applications Laboratory	5	5	4
	1844	Accounting II	5	0	4
	1102	Mathematics for Business Data Processing II	5	0	4
			20	5	16
Fourth Term	1820	Cooperative Employment Program			
Fifth Term	1003	Communication Skills III	2½	0	2
	1704	Case Study Laboratory	5	5	4
	1705	Basic Computer Concepts	2½	0	2
	1103	Mathematics for Business Data Processing III	5	0	4
	1900	Basic Electronics	3	2	4
			18	7	16
Sixth Term	1820	Cooperative Employment Program			
Seventh Term	1514	Business and Industrial Sociology	2½	0	2
	1004	Communication Skills IV	2½	0	2
	1706	Introduction to Computer Operation and Programming	10	5	10
	1901	Computer Electronics	3	2	4
			18	7	18
Eighth Term	1820	Cooperative Employment Program			
Ninth Term	1845	Business Statistics	5	0	4
	1823	Business Law	2½	0	2
	1005	Communication Skills V	2½	0	2
	1708	Computer Programming and Systems Analysis	10	5	10
			20	5	18
Tenth Term	1516	Business Structure and Industrial Relations	2½	0	2
	1006	Communication Skills VI	2½	0	2
	1709	Case Study, Systems Development	10	5	10
	1707	Installation Management	5	0	4
			20	5	18

Mechanical Design

This curriculum is designed to train engineering draftsmen to think, read, develop and speak about the problems and ideas of the designer, engineer, fabricator, and contractor, and translate these ideas into working drawings with a clearness and conciseness which will enable the fabricator to produce the product of the draftsman.

The Cincinnati Cooperative School of Technology devotes a maximum amount of time to drafting with guidance lectures directed towards specific problems being studied. Drawing courses are of a practical nature, including typical problems encountered by the draftsman. Instruction is offered by qualified persons who have had professional experience in the field of mechanical design. Because of the diversified nature of drafting, additional background and informational courses are offered. Likewise the School of Technology believes it advisable to supplement the education of the draftsmen with mathematics, communication skills and related mechanical technology.

It is recommended that applicants have completed high school mathematics, physics and mechanical drawing. Occupational opportunities for graduates include shop, assembly and detail drafting, machine design drafting, tool and die drafting, gage and fixture drafting, presentation drafting and multi-forms of mechanical drafting.

Mechanical Design Technology

		Cl. Hrs.	Lab. Hrs.
First Term	1001 Communication Skills I	5	0
	2201 Machining & Manufacturing Processes I	2	3
	2101 Basic Engineering Drafting (Introduction Into Graphics and Techniques)	5	5
	1111 Technical Math I	5	0
		17	8
Second Term	1820 Cooperative Employment Program		
Third Term	1004 Technical Writing	5	0
	2202 Machining & Manufacturing Processes II	2	3
	1112 Technical Math II	5	0
	2102 Intermediate Engineering Drafting (project)	5	5
		17	8
Fourth Term	1820 Cooperative Employment Program		
Fifth Term	2205 Mechanics (Physics)	3	2
	1113 Technical Math III	5	0
	2203 Machining & Manufacturing Processes III	2	3
	2103 Tool and Machine Drafting	5	5
		15	10
Sixth Term	1820 Cooperative Employment Program		
Seventh Term	1512 The Structure of Economics	5	0
	2206 Basic Electricity (Physics)	2	3
	2209 Strength of Materials	2	3
	2104 Tool & Die Design	5	5
		14	11
Eighth Term	1820 Cooperative Employment Program		
Ninth Term	1005 Effective Speaking	5	0
	2207 Heat (Physics)	2	3
	2208 Hydraulics (Physics)	2	3
	2105 Machine Design	5	5
		14	11
Tenth Term	2210 Systems Development & Design	5	5
	2106 Jig & Fixture Design	5	5
	1525 Job Relations	3	2
	1524 Industrial Supervision	3	2
		16	14

Graphic Communications Technology

This course of study has been prepared to provide a program to fit the needs of the student who wishes to enter the graphic arts industry. In general, it involves the studying and understanding of the graphic arts industry as a whole and its problems, human and mechanical. It is designed to provide the student with the knowledge and skill necessary to perform the basic mechanical operations required, and to provide the scientific knowledge which must be applied to resolve the problems of the industry, arising from rapidly advancing civilization. It is a two-year course consisting of five hours per day, five days per week.

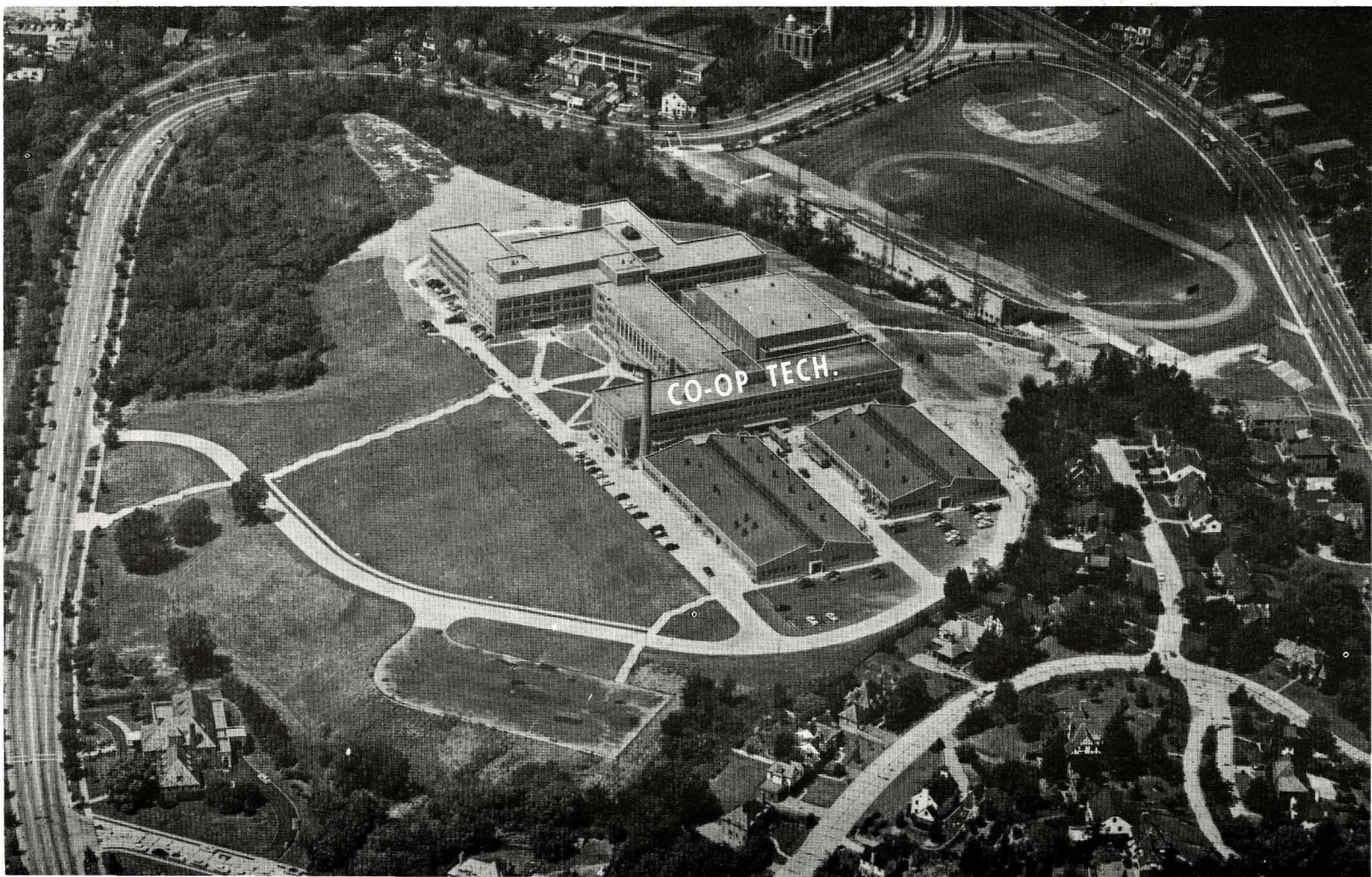
Printing radiates its influence through all the fields of social, educational, and commercial progress. In order not only to sustain our civilization, but to advance it, along with the acquisition of the fundamental knowledge and skills, a systematic knowledge must be applied in resolving the problems of today and tomorrow in the graphic arts industry. It is our hope that this course will provide the personnel necessary to fulfull this objective.

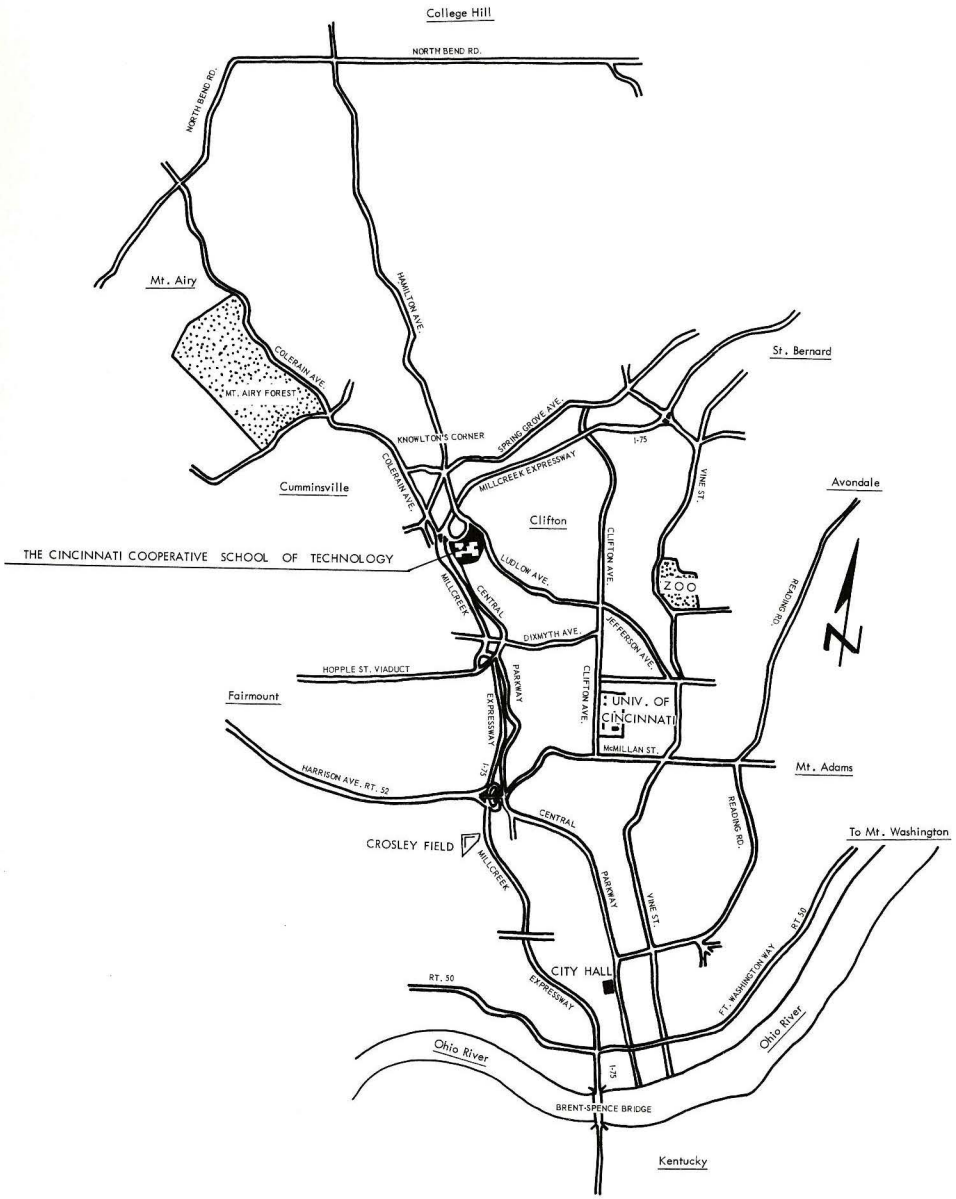
The major objectives of this course are:

1. To provide the student with the basic knowledge required to perform the major operations in printing.
2. To provide the student with the basic fundamentals in all phases of the graphic arts industry.
3. To provide the student with the scientific knowledge related to all phases of the industry.
4. To provide the student with an understanding of the problems arising in the industry.

Graphic Communications Technology
(Printing)

		Cl.	Lab.	Cr.
First Term	1001 Communication Skills I	5		4
	1512 Economics I	2½		2
	1401 Layout and Design	2½		2
	1111 Mathematics	5		4
	1402 Typography	5	5	6
		20	5	18
Second Term	1820 Cooperative Employment Program			10
Third Term	1002 Communication Skills II	5		4
	1513 Economics II	2½		2
	1160 Printing Science (Chem.) I	5		4
	1405 Proofreading & Copy Prep.	2½		2
	1410 Machine Composition	5	5	6
		20	5	18
Fourth Term	1820 Cooperative Employment Program			10
Fifth Term	1003 Communication Skills III	5		4
	1170 Printing Science II	5		4
	1415 Graphic Arts Processes	2½		2
	1420 Electronic Processes	2½		2
	1421 Cold Type Processes	5	5	6
		20	5	18
Sixth Term	1820 Cooperative Employment Program			10
Seventh Term	1004 Technical Writing	2½		2
	1813 Business Law I	5		4
	1843 Accounting I	5		4
	1428 Survey of Graphic Comm.	2½		2
	1430 Press Work	5	5	6
		20	5	18
Eighth Term	1820 Cooperative Employment Program			10
Ninth Term	1419 Survey of Graphic Comm.	2½		2
	1005 Effective Speaking	2½		2
	1823 Business Law II	5		4
	1845 Printing Cost Accounting	5		4
	1440 Offset Press Operation	5	7½	7
		20	7½	19
Tenth Term	1524 Human Behavior	2½		2
	1450 Estimating	5		4
	1460 Bindery Methods & Procedures	5		4
	1480 Photolithography	7½	7½	9
		20	7½	19


CO-OP TECH.



LOCATION
OF
THE CINCINNATI COOPERATIVE
SCHOOL OF TECHNOLOGY

MAP PREPARED BY MARY HEHN, 1966

Sales-Marketing Technology

This program offers men and women an opportunity to prepare for a career in marketing. It is a program through which one can learn by doing and at the same time study what is being done. When enrolled in the program, a student attends classes at the Cincinnati Cooperative School of Technology for one term, and then works for a wholesale or retail marketing firm for one term. This alternation of classes and on the job training continues five terms a year, for a two year period. Two groups of students are enrolled annually; one group attends classes while the second group is employed by the marketing firm and will be trained for a career in a particular product line. For example, the firms may market such diversified product lines as groceries, candy, toys, drugs, heating and air conditioning equipment, electronic parts, paper products, lumber, sporting goods, and many others.

The in-school classes at the Cincinnati Cooperative School of Technology are designed to give a firm foundation in business administration and the field of marketing.

Business mathematics, accounting, and other business and sales courses are suggested high school background for students planning to make application.

Sales-Marketing Technology Curriculum

		Cl.	Cr.
First Term	1001 Communication Skills I	5	4
	1131 Business Mathematics I	5	4
	1512 Economics I	2½	2
	1801 Principles of Marketing I	5	4
	1811 Salesmanship I	2½	2
	1821 Introduction to Business I	5	4
		25	20
Second Term	1820 Cooperative Employment Program		10
Third Term	1002 Communication Skills II	5	4
	1132 Business Mathematics II	5	4
	1513 Economics II	2½	2
	1802 Principles of Marketing II	5	4
	1812 Salesmanship II	2½	2
	1822 Introduction to Business II	5	4
		25	20
Fourth Term	1820 Cooperative Employment Program		10
Fifth Term	1003 Communication Skills III	5	4
	1522 General Psychology	2½	2
	1832 Personnel Management	5	4
	1842 Advertising and Display	5	4
	1833 Case Study I (Wholesaling)	5	4
	1854 Retail Selling	2½	2
		25	20
Sixth Term	1820 Cooperative Employment Program		10
Seventh Term	1004 Communication Skills IV	5	4
	1813 Management I	2½	2
	1823 Business Law I	5	4
	1843 Accounting I	5	4
	1803 Distribution I	5	4
	1834 Case Study II (Retailing)	2½	2
		25	20
Eighth Term	1820 Cooperative Employment Program		10
Ninth Term	1524 Human Relations	2½	2
	1005 Effective Speaking	2½	2
	1814 Management II	2½	2
	1824 Business Law II	5	4
	1844 Accounting II	5	4
	1804 Distribution II	5	4
	1835 Case Study III (Direct Selling)	2½	2
		25	20

Advisory Committees

Business Data Processing

Mr. Howard Campbell . . . . . William S. Merrell Company
Mr. David Cox . . . . . Procter and Gamble Company
Mr. Edward Ebel . . . . . Cincinnati Public Schools
Mr. O. V. Herried . . . . . American Insurance Companies
Mr. Clifford House . . . . . Cincinnati Public Schools
Mr. John Roman . . . . . Cincinnati Public Schools
Mr. Jack Weiss . . . . . Gibson Greeting Card Company

Mechanical Design

Mr. Donald Blaney . . . . . General Electric Company
Mr. Jack Cappel . . . . . Western Home Center
Mr. Theodore Herklotz . . . . . Cincinnati Public Schools
Mr. Samuel Hicks . . . . . Formica Corporation
Mr. Werner Jessen . . . . . Alexander and Associates
Mr. Ben Kearns . . . . . Keco Industries, Incorporated
Mr. James Larva . . . . . Ford Motor Company
Mr. Russell Little . . . . . Little Engineering Design
Mr. Harry Machenheimer . . . . . City of Cincinnati
Mr. Richard Outcalt . . . . . University of Cincinnati
Mr. William Weisel . . Cincinnati Milling Machine Company

Graphic Communications

Mr. Harry Brinkman . . . Cincinnati Lithographing Company
Mr. Eugene Krygowski . . . . . Cincinnati Public Schools
Mr. Robert McBreen . . . . . Feicke Printing Company
Mr. Wilbert Rosenthal . S. Rosenthal and Sons, Incorporated
Mr. James Wood . . . . . Standard Publishing Company

Sales-Marketing

Mr. David Eagleson . . . . . Emery Industries, Incorporated
Mr. Ralph Estes . . . . . Cincinnati Time Recorder Company
Mr. A. C. Fusaro . . . . . Cincinnati Advertisers Club
Mr. James Holthaus . . . . . Federated Department Stores
Mr. Thomas Irwin . . . . . Victor Comptometer Corporation
Mr. John Roman . . . . . Cincinnati Public Schools
Mr. Jude Vines . . Correct Automotive Jobbers Association

Communication Skills

1001 — COMMUNICATION SKILLS I — 5 class hours
Reading improvement with emphasis on comprehension. Use is made of recently developed techniques and instruments.

1002 — COMMUNICATION SKILLS II — $2\frac{1}{2}$ or 5 class hours
Basic English usage. Emphasis is on sentence structure, punctuation, paragraphing, and spelling. Application of the principles of English usage to the various forms of written and oral expressions. Analysis is made of each student's strengths and weaknesses.

1003 — COMMUNICATION SKILLS III — 5 class hours
Techniques for specific writing needs. Business and social communication. Leadership training in conference and parliamentary groups.

1004 — TECHNICAL WRITING — $2\frac{1}{2}$ or 5 class hours
Techniques of collecting and presenting scientific data. Informal and formal reports along with special types of technical papers. Forms and procedures for technical reports are studied and a pattern is established for all formal reports to be submitted in this and other courses.

1005 — EFFECTIVE SPEAKING — $2\frac{1}{2}$ or 5 class hours
Public speaking with principles of effective oral communication and application of these principles in a variety of practical speaking situations.

1014 — COMMUNICATION SKILLS IV — 5 class hours
Emphasis on business communication skills, including business letters and other business forms. Also, dictation and telephone techniques, business etiquette, and oral and written reports are required.

1101 — MATHEMATICS FOR B.D.P. I — 5 class hours
Number system; algebraic equations, linear equations, negative numbers, negative exponents. Arithmetic of computers; octal, binary and decimal systems. Introduction to set and group theory.

1102 — MATHEMATICS FOR B.D.P II — 5 class hours
Graphs, vector spaces, trigonometry.

1103 — MATHEMATICS FOR B.D.P. III — 5 class hours
Continuation of number systems; decimals, binary, octal and conversions. Solving equations of higher degree with two unknowns; fixed and floating point numbers. Matrices and determinants, limits.

1104 — MATHEMATICS FOR B.D.P. IV — 5 class hours
This course is to acquaint the student with the type of logic that a computer uses in its operation. Linear programming, more number systems. Traditional logic and uses in its operation. The memory and circuitry of the machine will be covered. Boolean algebra of propositions with application to switching circuits.

1111 — TECHNICAL MATHEMATICS I — 5 class hours
The course includes: solution of linear equations in one, two, and three unknowns, solution of formulae, and ratio, proportion, and variation. This is followed by functional relationships and an introduction to graphing. The conclusion of the course is a review of plane geometry, introduction to the trigonometric functions, and the graphs of the trigonometric functions.

1112 — TECHNICAL MATHEMATICS II — 5 class hours
A continuation of Technical Mathematics I to include vectors and imaginary and complex numbers. Logarithms are introduced and then applied to trigonometry.

1113 — TECHNICAL MATHEMATICS III — 5 class hours
A continuation of Technical Mathematics II to include plane and solid analytic geometry. The study includes the straight line, circle and conic sections. Algebraic methods are applied to the study of curves and surfaces in three-dimensional space.

1131 — BUSINESS MATHEMATICS I — 5 class hours
Training in the mathematical skills required by modern business. Some units help gain speed in making basic calculations. Other units will train in business operations or business forms that call for special application of mathematical skill. Topics studied include: fundamental arithmetic operations, fractions, decimals, percentage.

1132 — BUSINESS MATHEMATICS II — 5 class hours
A continuation of Business Mathematics I. Topics studied include: mark up and mark down, interest, loans, depreciation, investment, payroll, insurance.

1512 — PRINCIPLES OF ECONOMICS—MACROECONOMICS
An introductory study of the analysis and the applications of basic economic theory as applied to the problems of labor and industrial relations; income and spending of the aggregate of individuals, business firms, and various levels of government; money, commercial, and central banking; price levels and inflation; the role of a national government in fiscal and monetary policy affairs in a private enterprise economy. As they evolve, current economic issues are introduced and analyzed.

1513 — PRINCIPLES OF ECONOMICS—MICROECONOMICS
An introductory study of the pricing and allocation mechanism of the classical market economy using the theory and analysis of supply—demand on an individual basis in the determination of the nature of production, consumption, and distribution of the national output. International trade, the balance of payments, economic growth and development, and comparative economic systems are surveyed and analyzed.

1514 — SOCIOLOGY
This course analyzes the relationship of the individual and the group to social institutions; and cultural background of our civilization; collective behavior, human ecology and social change. Emphasis is given to the social effects of modern technology and the adjustments of man to his culture.

1515 — HUMAN BEHAVIOR
This course serves as a basis for the consideration of human behavior problems and understanding oneself. Psychological techniques and principles in present day industry; analysis of modern socio-industrial society.

1516 — BUSINESS ORGANIZATION
Content includes background of industrial-labor relations; structure of modern corporation and labor organizations; effects of modern technology; labor unions and collective bargaining; profit motive and incentives; employers' association; labor legislation; labor turnover; stabilization of employment.

1522 — GENERAL PSYCHOLOGY
A scientific study of human behavior with emphasis on motivation, learning, individual differences, and personality.

1524 — HUMAN RELATIONS
Human behavior individually and in groups. Supervisory relations.

1701 — BASIC UNIT RECORD LABORATORY
Instruction in the theory of card punch and paper punch equipment, with lab exercises involving panel wiring and operations of the following machines: card punch, sorter, interpreter, reproducing punch, collator, and accounting machine. Practical exercises will be typical of those performed in existing installations.

1702 — INTRODUCTION TO DATA PROCESSING
Survey of basic concepts.

1703 — BUSINESS APPLICATIONS LABORATORY
Students are required to make complete case studies. Presentations include card forms, flow charts, systematic problem solving, etc.

1704 — CASE STUDY LABORATORY
Survey of specific situations.

1705 — BASIC COMPUTER CONCEPTS
This sequence of two courses is designed to give the student a complete knowledge of computers. Specifics will be taught such as machine coding, languages, utility programs, table look up, address modification, program switches, program checks, sub-routines, etc.

1706 — INTRODUCTION TO COMPUTER OPERATIONS AND PROGRAMMING
This course will give the student the background that is necessary in understanding unit record and computing machines. All computer systems regardless of size, type, or basic use have certain common fundamental concepts and operational principles. This course is not an introduction to any specific machine but is intended to provide a background for future detailed study of specific systems. The remainder of the term will be devoted to introductory programming. A problem with loader will be written in machine language. Autocoder for the computer will then be presented as an introduction to processors and additional problems will be written in this symbolic language.

1707 — SYSTEMS OBSERVATIONS AND OPPORTUNITIES

Visiting lecturers and field trips. Survey of industrial laboratories and job opportunities will take the students to different computer installations in the area to study and observe actual programs being processed relative to organization and application.

1708 — COMPUTER PROGRAMMING AND SYSTEMS ANALYSIS

Provides training in programming techniques and symbolic coding for a computer installed in the Technician School. Scientific, business, and engineering problems as they would be programmed on the computer will be taught. Binary computers; the highly sophistic computers; how they differ from other computers and the roles they play in modern computer installations.

1709 — CASE STUDY OF SYSTEMS SELECTIONS

The student is required to design a system around a given application. He must select the type of data to be used, the type of machine or machines that will be used. Total systems concept will be taught.

1900 — BASIC ELECTRONICS

Survey of electronic principles.

1902 — COMPUTER CIRCUITS

Study of circuits.

1801 — PRINCIPLES OF MARKETING
Details the principles and functions of marketing. The essential concepts of competition, demand, and the structure of distribution. Stresses marketing management and the role of the marketing executive in critical decisions.

1802 — MARKETING II
The analysis, interpretation, application, and forecasting of research findings in marketing management. The case method is used extensively in relating these techniques to actual marketing problems.

1803 — DISTRIBUTION I
An introduction of the place wholesaling has in the American economy.

1804 — DISTRIBUTION II
A study of the scientific management of a direct-selling enterprise.

1811 — SALESMANSHIP I
The personal and economic aspects of selling plus an overview of what is necessary for a person to be successful in selling.

1812 — SALESMANSHIP II
Study of the selling process. A point by point observation of the steps of a sale and an introduction to industrial and wholesale selling.

1813 — MANAGEMENT I
The basic aim of this course is to supply the student with a realistic overview of the principles and practice in the management area.

1814 — MANAGEMENT II
A continuation of Management I with an insight into the psychological area of management.

1820 — COOPERATIVE EMPLOYMENT PROGRAM — 8 credit hours
Full time employment with a marketing establishment.

1821 — INTRODUCTION TO BUSINESS I
This course is designed to give a description of business, to develop an awareness of the economic framework that constitutes our capitalistic system and to increase the student's business vocabulary.

1822 — INTRODUCTION TO BUSINESS II
An introduction to personnel, finance, managerial controls and law. Regulated industries and taxation.

1823 — BUSINESS LAW I
This course presents a legal framework of business for beginning students.

1824 — BUSINESS LAW II
A continuation of Business Law I with a coverage of government regulations, trust, and insurance.

1834 — CASE STUDY II
A comprehensive introduction to the retailing field in its many phases.

1832 — PERSONNEL MANAGEMENT
A look at the many facets of personnel management and its contribution to the employer.

1833 — CASE STUDY I
Case Study I will allow the student to apply the training he has received both on the job and in the classroom in a practical manner. It allows the student to become acquainted with many of the wholesaler's managers

1835 — CASE STUDY III
This course follows the same format of Case Study I. The student will work with a classroom instructor and different wholesalers.

1842 — ADVERTISING AND DISPLAY
An inspection of various advertising media and their effects upon business. Practical applications of display theories as they relate to window and internal displays. Display and its relation to Interior Decorating and Design.

1843 — ACCOUNTING I
A study of the principles and practices of elementary accounting. Designed to give a broad knowledge of accounting in its practical application.

1844 — ACCOUNTING II
A continuation of Principles of Accounting I. This course allows the student to put his accounting skills to practical work.

1845 — BUSINESS STATISTICS
The fundamentals of statistics, and the application of statistical-decision theory in business. Includes the construction, use, and interpretation of statistical data; probability theory; sampling distributions; risk and uncertainty. Stresses marketing applications.

1402 — TYPOGRAPHY

To aid in decision making for the selection of a most desirable progress in a given situation. To acquire knowledge of the fundamental systems of letter assembly, including hand composition, machine composition, copy fitting of text matter to space allocation, and time allotments. Basic requirements of hot metal composition — punched tape for hot metal — punched tape for cold composition and strike-on composition, hot metal display composition and cold type display composition.

1410 — MACHINE COMPOSITION

An extended study of various type setting machines both magnetic tape controlled and punched tape controlled utilizing hot metal — photographic and strike-on products. Analysis and recommendations of findings.

1430 — PRESSWORK

Survey and justification studies of press equipment to assist in suggesting capital expenditures for future growth and replacement cycles for letterpress — offset and flexographic systems.

1480 — PHOTOLITHOGRAPHY

Detailed investigations of policies, principals and systems for wet offset and dry offset — sheet fed and web fed. Electronic computer controls over basic systems and automation of present machinery. Recommendations to management for improvements.

1401 — LAYOUT AND DESIGN

Considerations for display matter using ratio studies of black to white space allocations. Design for page layout of text matter — breakdown of books and individual page.

1420 — ELECTRONIC PROCESSES

The use of electronics, computers, tape controls, etc. in graphic communications.

1160 — SCIENCE

Physical and chemical laboratory exercises to evaluate materials used for various processes. Scientific approach to ink manufacture and paper manufacture — ink and paper compatibility — lithographic solutions and uses, precise measures and instruments.

1405 — PROOFREADING AND COPY PREPARATION

Usage and acceptability of English — special symbols of proofreading — methods improvements for indicating and making changes — work flow study of prepared copy to end result.

1415 — GRAPHIC ARTS PROCESSES

Further investigations into major printing processes with emphasis on production gains versus outlay of capital investment to determine process suitability — actual plant design and layout to scale. Quality control systems in each process to be initiated.

1421 — COLD TYPE PROCESSES

Computerized copy preparation — automatic copy preparation — manual preparation comparisons. Emphasis on current systems with research studies for modification. Suggestions to top management.

1450 — ESTIMATING

Time studies to develop statistics for future cost control, material allocations, control and inventory. Cost accounting comparisons to price quotations.

1440 — OFFSET PRESS OPERATIONS

Research into techniques of operation and control — study of various wetting systems — comparison of wet and dry methods. Plate comparisons to include wipe on, presensitized, albumin surface, deep etch, bi-metal, tri-metal, dycril and other synthetics — grained and grainless.

Mechanical Design Engineering

2101 — DRAFTING I — 5 class hours lecture,
10 class hours lab.

Introduction to the techniques and functions of drafting. Development of working sets of drawings (assemblies and details). Use of terms, modern drafting equipment, sections, multi-view projection, reference manuals and standard manuals related to the organization and application of detail drafting. Individual skills and techniques in drafting will be developed.

2102 — DRAFTING II — 5 class hours lecture,
10 class hours lab.

A continuation of Drafting I with emphasis on precision dimensioning, note writing, and practical drafting experiences in gears, cams, developments (sheet metal), casting and pattern drawings.

2103 — DRAWING III — 5 class hours lecture,
10 class hours lab.

A continuation of Drafting II, with special emphasis on practical job and drafting experience in: jigs and fixtures, tool and die, general manufacturing drawings, bills of materials and specification application. A practical knowledge of the development of working drawings as related to the manufacturing processes, is included.

2201 — MACHINE SHOP OPERATIONS I — 5 class hours

Emphasis will be placed on the role and function of the machine shop within the total manufacturing process. Instruction is given in the operation and understanding of the role and use of the following machines and practices related to the manufacturing process: safety, measuring tools, layout of work, set up, use and operation of the drill press, lathe, and shaper.

2202 — MACHINE SHOP OPERATIONS II — 5 class hours

A continuation of Machine Shop Operations I with emphasis on the set up, use and operation of the milling machine, advanced shaper techniques, grinding (pedestal, surface, cylinderical), sawing and filing, friction sawing, heat treating and metallurgy.

2203 — WELDING — 5 class hours

An introduction and orientation to gas and electric processes and principles of welding. Students will participate in the application and study of the fundamentals of welding metals.

2204 — MECHANICS (PHYSICS) — 5 class hours

A study of mechanical motion and the related theory of developing devices to transmit motion. Liquid, gas, and electric devices used in motion transmission will be surveyed. Applications related to fluid power and numerical control will be introduced.

1004 — TECHNICAL WRITING — 5 class hours

Techniques of collecting and presenting scientific data. Informal and formal reports along with special types of technical papers. Forms and procedures for technical reports are studied and a pattern is established for all formal reports to be submitted in this and other courses.

1005 — EFFECTIVE SPEAKING — 5 class hours

Public speaking with principles of effective oral communication and application of these principles in a variety of practical speaking situations.

1966-67 School Calendar

FIRST TERM ••••••••••••••••••••
(September 6 - November 10)

September 6 — Classes Begin
October 28 — (No School) SWOTA
November 9-10 — Final Examinations

GROUP A	GROUP B
Full Load in School	Work Experience

SECOND TERM ••••••••••••••••••
(November 14 - January 27)

November 14 — Classes Begin
November 24-25 Thanksgiving Holiday
December 23 - January 2 (Inclusive) Christmas Recess
January 26-27 — Final Examinations

GROUP A	GROUP B
Work Experience	Full Load in School

THIRD TERM ••••••••••••••••••••
(January 30 - April 7)

January 30 — Classes Begin
February 22 — Holiday
March 23-27 (Inclusive) Spring Recess
April 6 - 7 — Final Examinations

GROUP A	GROUP B
Full Load in School	Work Experience

FOURTH TERM ••••••••••••••••••
(April 10 - June 16)

April 10 — Classes Begin
May 30 — Holiday
June 15-16 — Final Examinations

GROUP A	GROUP B
Work Experience	Full Load in School

FIFTH TERM ••••••••••••••••••
(June 19 - August 23)