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AN ANALYSIS OF CURRENT PRINTING PROGRAMS
AT SOUTHERN NEGRO UNIVERSITIES AND
COLLEGES GRANTING THE BACHELOR
OF SCIENCE DEGREE

BY

FORD RATCLIFF, JUNIOR

A thesis submitted
in partial fulfillment of the requirements for the
degree Master of Science, Department of
Printing and Journalism, South Dakota
State College of Agriculture and
Mechanic Arts

August, 1963

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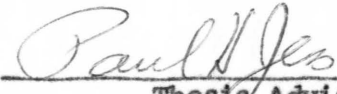
AN ANALYSIS OF CURRENT PRINTING PROGRAMS


AT SOUTHERN NEGRO UNIVERSITIES AND

COLLEGES GRANTING THE BACHELOR

OF SCIENCE DEGREE

This thesis is approved as a creditable, independent investigation by a candidate for the degree, Master of Science, and is acceptable as meeting the thesis requirements for this degree, but without implying that the conclusions reached by the candidate are necessarily the conclusions of the major department.


Thesis Adviser


Head of the Major Department

26615

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FR, Jr.

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INTRODUCTION

Constant evaluation is necessary to determine whether or not an educational curriculum is serving the purpose for which it was designed. The development of an industrial curriculum requires the thinking of both industrialists and educators if it is to be effective. Educators must know what is being done in industry as well as the needs of industry. Industry must recognize its own needs and the direction in which it is moving in order to anticipate its future needs. These needs and anticipations must be communicated to educators, who in turn must adjust or structure the curriculum to produce qualified graduates.

Curriculum construction is the result of the efforts of one man or a staff of men, usually based upon his or their experience in the field. Because of this fact, the resulting curriculum may be inadequate for the total development of the student in the area of his education. The problem of adequacy, then, is an acute one and can be solved only by reflective thinking and the equal concern of educators and industrialists alike. They must sit down and plan the program together. The results of their efforts will be reflected in the caliber of graduates produced.

An employer opinion survey conducted in Detroit (1)* indicated the need for:

*All citations used in the thesis refer to the appropriate work listed in Literature Cited. The first number refers to the entire work. The second figure which follows the hyphen, when used, denotes the page number.

1. Serious thinking on the part of the industrialists concerning adequate vocational and professional training.
2. Better recruitment programs in conjunction with better public relations programs.
3. The need for professional educators, business and industrial leaders to combine their efforts in the cause of upgrading higher education in America.
4. More and better educational counseling of pre-college students.

Little study, if any, has been made of Negro universities and colleges with reference to general curricula for printing programs found in such institutions.

It is the purpose of this study, therefore, to analyze the various printing curricula at Negro institutions and to show strengths and weaknesses of these programs as revealed in the catalogs of these institutions and from responses to questionnaires.

Justification of the Study. The people of this country are becoming aware of the need for adequate programs in vocational and technical education. This awareness is evident by the recent appointment of the "Consultants on Vocational Education" by The President of the United States. In their Agenda for Action, Part III, the consultants wrote:

Our Advancing Technology demands more skilled craftsmen and highly skilled technicians in occupations requiring scientific knowledge. Vocational and technical education must prepare many more technicians and skilled craftsmen for employment in industry, business, agriculture and the health fields. (2-21)

An adequate program, irrespective of courses, lies within the framework of percentages of educational concentration from a

business, technical and academic viewpoint. For example, three credit hours of English would represent a per cent of the total hours required. It is conceivable, therefore, that a particular curriculum could be established in regard to percentage of the educational concentration in each area of subject matter. Once an established percentage of academic, technical and business subject areas has been achieved, then educators may proceed to construct curricula which are adequate.

It should not be left to chance that the course of study will be overly laden with technical education and consequently lack adequate education to provide the learner with experiences in management. Likewise, the learner must not be lacking in general academic work. It is logical, therefore, to assume that an adequate curriculum will aid educators in producing graduates who are well-rounded in educational experience and well suited for both industry and society.

This study may aid educators who are planning similar programs to formulate curricula which will contribute to producing qualified students. With a knowledge of what is practiced by others, the planner of a new program may find guidelines which are beneficial to the cause of curriculum planning.

Scope of the Study. This study was designed to analyze course offerings of printing programs found at Negro universities and colleges. Junior colleges were excluded, the study being limited to bachelor's degree granting colleges. These institutions

are located in the states of Alabama, Louisiana, Florida, Mississippi, Missouri, Texas and West Virginia and are listed in the "Source of Data."

Central State College of Wilberforce, Ohio, was eliminated from the study because only one printing course was offered in its industrial arts program. (3-189) Industrial arts programs which permit the student to concentrate in printing were included in this study. Those industrial arts programs, however, which do not allow printing concentration were excluded.

Value of the Study. Throughout the country colleges are upgrading their programs in technical education, industrial education and industrial arts. Many vocational programs previously found in colleges are being taken over by high schools. High schools are also offering "salable skills" courses to high school students, post high school students and adults. In the interest of accredited programs, therefore, college administrators are favoring highly technical areas to avoid duplication of work done on the secondary level. For example, brick masonry and carpentry have been replaced at the collegiate level by building construction.

In keeping with this practice, many rewards may be experienced through serious curricula studies.

Source of Data. The primary source of data collected was questionnaire returns. Secondary sources included:

1. Information found in catalogs of Negro universities and colleges. These institutions were: Alabama A. and M. College,

- Normal, Alabama; Florida A. and M. University, Tallahassee, Florida; Lincoln University, Jefferson City, Missouri; Mississippi Vocational College, Itta Bena, Mississippi; Prairie View A. and M. College, Prairie View, Texas; Southern University and A. and M. College, Scotlandville, Louisiana; Texas Southern University, Houston, Texas; and West Virginia State College, Institute, West Virginia.
2. The South Dakota State College Main Library, the South Dakota State College Department of Printing and Journalism and the Office of Admission and Records of South Dakota State College.
 3. The International Graphic Arts Education Association, Suite 406; 1411 K Street, N. W., Washington 15, D. C.
 4. The American Vocational Association, Inc., 1010 Vermont Avenue, N. W., Washington, D. C.

Comparison With Previous Studies. In 1954, workshop panels were set up at the 29th Annual Conference of the International Graphic Arts Education Association. (4-3) The purpose of these panels was to draw up suggested outlines for courses of study in graphic arts. The work of these groups included studying course offerings for high schools, junior colleges and senior colleges. The scope of the study embraced industrial arts education, vocational education and courses for technical institutes, universities and colleges.

Course of study reports by the various committees were revised and adopted in 1955 at the Association's 30th Annual Conference and further revised at the 31st Annual Conference of the Association in 1956.

In the Technical Institute, Colleges and Universities section of the report (4-30), it was revealed that printing education was still in the developmental stage. It was stated, however, that printing education programs should provide:

1. Elements of general education that are necessary for personal growth and effective living.
2. Academic courses related to graphic arts management to train students to solve problems in printing on the basis of scientific principles.
3. Basic production and equipment procedures in printing.
4. Administration and management procedures of the graphic arts industry.
5. Graphic arts courses for commercial and fine arts students, business administration students and other interested students so that they may obtain an introductory working knowledge of the graphic arts industry and its place in the life of our country. (4-32)

The above objectives should serve as guides for curriculum planners in universities and colleges. This writer, however, was concerned with curricula at Negro universities and colleges. He did not propose to set up a model curriculum, but rather to analyze existing programs.

Robert G. Hacker, a former graduate student in printing management at South Dakota State College and now an instructor in printing at Rochester Institute of Technology's School of Printing,

investigated printing education offered by selected universities and colleges. (5) Hacker limited his study to accredited institutions and was concerned, primarily, with comparing the various programs at these institutions.

This study varies from Hacker's work in that it is limited to Negro institutions whether accredited or not. On the other hand, no attempt was made to compare program offerings, because the programs found at Negro universities and colleges showed considerable variation in scope and purpose.

Another study was conducted by Selmer O. Wake, Santa Barbara Club of Printing House Craftsmen, to determine the need for a college on the Pacific Coast. (6)

In his study, Wake said:

There is a need for curriculum study designed to meet the needs of the industry. It should be a cooperative study by the leaders of labor, management and education. The success of such a college program will depend on how closely it meets industry's needs. (6-51)

Wake, however, made no attempt to study the facilities available, but rather to point them out in an effort to show the need for printing on the Pacific Coast.

However, as far as this writer was able to determine, neither of the studies was primarily concerned with printing programs at Negro institutions.

Terminology. These words have the following meaning when referred to in this study:

1. Technical Education: That education designed to enable the student to earn a living in an occupation where success is dependent largely upon technical information and of the laws of science and technology as applied to modern design, production, distribution and service; referred to, also, as vocational technical education.
2. Industrial Education: Education designed to aid the student to develop basic manipulative skills in various industrial occupations, to aid him in choosing his life's occupation and to upgrade the skills of workers already employed in industry; referred to, also, as vocational industrial education.
3. Industrial Arts: Education designed to acquaint the student with industrial and technical occupations for general education purposes. It is referred to on the collegiate level as teacher-training and is identified as one of the practical arts because it is not vocational in its objectives.
4. Technical Courses: Courses of subject matter content which equip the student with technical skills and procedures of the printing industry.
5. Academic Courses: Courses necessary to insure successful living and an understanding of modern society.
6. Business Courses: Courses which equip the student with marketable skills, knowledge and attitudes for managerial positions in the printing industry.

The above definitions are generally set forth by Vocational and Practical Arts educators, and they are reflected in this study with the same connotations.

METHODOLOGY

This study is an analysis of printing programs employed by Negro institutions of higher learning in the South. The term Negro institution refers to those institutions which are predominantly or were predominantly attended by Negro students. There has been "reverse integration," however, and the so-called Negro institutions, in some instances, are beginning to lose that identity.

The first step in undertaking the study was to find out which of the American universities and colleges were classified as Negro institutions and where these institutions were located.

A listing of Negro universities and colleges was made using the American Council on Education's American Universities and Colleges. (7) After eliminating junior colleges and special institutions (e.g., medical institutions), 80 institutions remained.

The list of institutions was cross-checked with listings found in the tenth edition of the College Blue Book. (8) The list of 80 institutions was verified but was not altered.

The College Blue Book and the American Universities and Colleges publications, however, did not disclose which of these 80 institutions offered printing.

The list of 80 institutions was cross-checked further with A. E. Miller and Betty Brown's National Directory of Schools and Vocations (9) in an effort to find out which of the institutions offered printing. By using this reference, eight colleges on the list of 80 were checked as offering printing but no college was

taken from the list.

After library resources had been exhausted, the writer forwarded correspondence to the Education Council of the Graphic Arts Industry, the American Vocational Association and school officials in various Southern states. Along with the Education Council of the Graphic Arts Industry's A Partial List of College Courses for the Graphic Arts Industry (10), the National Directory of Schools and Vocations (9) and information received through personal contact, the list of 80 institutions was narrowed to 23 schools which were believed to offer printing instruction.

Catalogs. A letter requesting a catalog was mailed to the institutions remaining on the list. In an effort to expedite the study, however, some catalogs were secured from Mr. Paul H. Jess, Department of Printing and Journalism, South Dakota State College. Other catalogs were obtained from the South Dakota State College Main Library and the Office of Admissions and Records at South Dakota State College.

A thorough study of catalogs was made to determine the nature of the various programs at Negro institutions. The courses of each curriculum used in this study were classified under the headings of academic, business and technical. Electives which could not be identified under one of these headings (due to curriculum options) were listed separately. (For course classifications see Appendix C.)

Questionnaires. Questionnaires were mailed May 9, 1963, to 23 Negro institutions. On or before May 31, 1963, 21 of these institutions had responded. This represented a response rate of approximately 91 per cent. A copy of the questionnaire may be found in Appendix B.

Question 1 of the questionnaire was worded to eliminate colleges which did not offer printing courses, even though it was generally believed that these colleges had printing facilities. Answers to this question eliminated 14 colleges. The list of 23 Negro institutions, therefore, was reduced to nine universities and colleges.

The purpose of question 2 was to determine how many Negro institutions offered degrees in printing. Industrial arts and industrial education were included in this study when it was found that such programs allowed students to choose printing as a major skill. This question eliminated one college and the number of institutions was finally reduced to eight.

Question 3 was used to determine concept or major emphasis of the various programs. The information also aided in the location of programs as printed in the catalogs of the respondent institutions.

Objectives printed in a catalog usually are general statements which embrace the entire vocational or technical area of the institution. Question 4 was included as an effort to get specific objectives as related primarily to printing programs.

Some institutions allow students to specialize in specific areas (e.g., machine composition, presswork, etc.). Others do not. Question 5 was included to determine how many of the respondent institutions allowed students to specialize in this way.

Question 6 was used to determine whether or not students were allowed to choose a "minor" study field at respondent institutions.

Questions 7, 8 and 9 were designed to determine if a terminal program was offered, the length of the program and the major emphasis of the program.

Questions 10, 11 and 12 were designed to obtain a distribution of the number of students served by printing departments of respondent institutions, the number of full- and/or part-time instructors employed and qualifications required of the instructors.

To determine the extent of printing facilities at respondent institutions, the respondent's concept of the adequacy of facilities and how equipment was acquired, questions 13, 14, 15 and 16 were included.

Questions 17, 18 and 19 are closely related, in that these questions were to reflect possible changes in the program and possible reasons for such changes. These questions were especially important to determine if the printing programs at Negro schools were expanding or declining. A few Negro institutions have discontinued printing programs and now utilize the printing facilities in production of the school's general printing and publication needs.

Question 20 was included to determine whether or not printing educators would gear printing programs in a common direction. In other words, would a majority of the printing educators at Negro institutions prefer printing management, printing education or vocational printing.

Because of the small number of Negro institutions composing the universe of this study, each school will be discussed separately in an effort to categorize each program according to information received on questionnaires and in catalog studies.

FINDINGS: AN ANALYSIS OF CURRENT PRINTING PROGRAMS AT
SOUTHERN NEGRO UNIVERSITIES AND COLLEGES

Alabama Agricultural and Mechanical College. The Alabama A. and M. College grants the Bachelor of Science degree to students who complete satisfactorily the Printing Production and Management Curriculum; maintain a "C" average (4-point system); pass the English Proficiency examination and meet all other requirements of the college.

Printing instruction is the work of the Department of Industrial Education at Alabama A. and M. College. This department is one of three in the College's Division of Business and Applied Science. Printing Production and Management was the only degree-level printing course of study offered by the institution. (11-49)

The statement of purpose set forth by the college was:

The curriculum in Printing Production and Management is designed to meet many of the demands of both the production and management phases of the printing industry. Graduates from the curriculum, therefore, should be capable of filling competently positions on either level.
(11-156)

The course in printing production and management was a four-year (eight semesters) program requiring 130 credits for graduation. (11-156)

The curriculum provided for approximately 32.32 per cent academic courses, 16.92 per cent business courses and 50.76 per cent technical courses. The percentages of general subject classifications and subjects in the printing production and management program are shown in Table 1. In this curriculum, then, emphasis

Table 1. Alabama A. and M. College's Printing Production
and Management Curriculum--General Classifications
of Subject Offerings, Credits and
Percentage of Totals

Subjects and Classifications	*Credits	**Percentage of Totals
Academic		
Art	2	1.54
English	9	6.92
Mathematics	6	4.62
Orientation	0	0.00
Physical Education	2	1.54
Social Science	17	13.08
Chemistry	6	4.62
(Total Academic)	<u>42</u>	<u>32.32</u>
Business		
Economics	4	3.08
Accounting	6	4.62
Marketing	3	2.31
Business Law	6	4.62
Advertising	3	2.31
(Total Business)	<u>22</u>	<u>16.92</u>
Technical		
Typography	7	5.39
Presswork	10	7.69
Printing History	3	2.31
Drawing	6	4.62
Machine Composition	10	7.69
Layout and Design	3	2.31
Makeup	2	1.54
Bindery	2	1.54
Estimating	6	4.62
Production Problems	8	6.15
Proofreading	3	2.31
Printing Management	3	2.31
Printing Industry	3	2.31
(Total Technical)	<u>66</u>	<u>50.76</u>
Totals	130	100.00

*Semester hours.

**Percentage = Credits ÷ 130.

was definitely technical, because 66 of the 130 required credits fell in the technical category.

Machine composition and general presswork, with ten credits each, were the dominant subjects. Production problems, typography and drawing accounted for eight, seven and six credits respectively.

Among the academic courses, the social sciences consumed 17 of the 42 credit hours, mathematics and chemistry combined, representing the sciences, required 12 credit hours and English was allotted nine credit hours. These courses were dominant in the academic category.

In the business classification, business law and accounting with six credits each accounted for more than half of the 22 credits. Credit distributions under the business heading were not as diverse as were credit distributions under the academic and technical headings.

The technical area, which accounted for 50.76 per cent of the total credits in this curriculum, included such instruction as:

1. General layout and design which entails mechanics and procedures of placing elements in a "group relationship" for a job of printing.
2. Mechanics of hand and machine composition.
3. Printing history and current problems in the printing industry.
4. Structural design.
5. Making up and placing pages in a "form."
6. General press operation and procedures.
7. Procedures for correcting copy.

8. Bindery machines, techniques and procedures. (11-157)

The 42 credits allotted for academic courses were 13.72 percentage points below the "study average"; business courses with 22 credits were 9.64 percentage points above the average; technical courses dominated the curriculum with 66 credits and were 8.66 percentage points above the average and electives with no percentage points were 4.82 percentage points below the average. (See Tables 14 and 15 of this study.)

This curriculum had the fewest credits in the academic group of any of the curricula studied. The business and technical areas were relatively heavy, but the curriculum had no electives. The emphasis on the business and technical courses apparently is intended to provide students with business and technical backgrounds needed in the printing industry.

A two-year printing program was also offered at this institution. (See Appendix C.) Students enrolled in the two-year program, after completion of the two years, may convert to the four-year printing production and management program. The purpose of this program was to train craftsmen for the industry.

The courses of study in printing at Alabama A. and M. College were implemented in a printing laboratory consisting of slug-casting machines, handfed platen presses, an automatic platen press, an automatic cylinder press and an offset duplicator. "Supporting equipment" included general composing and bindery machines. No indication was made, however, whether this institution gave instruction in offset printing, and no offset courses appeared in the

curriculum. It is apparent that printing students are restricted to "letterpress" printing at this institution.

Other information bearing on the objectives of the general printing program at Alabama A. and M. College includes:

1. Two full-time and one part-time instructors were currently employed to serve four freshmen, three sophomores, two juniors and five seniors. (No information was received concerning the number of students enrolled in the two-year program.)
2. Printing instructors are required to qualify for teaching with two year's experience in the printing industry and a Bachelor's degree with a major in printing.
3. All equipment, according to respondent, was purchased new.
4. Equipment was rated "fairly adequate" for curriculum purposes by respondent.
5. Respondent receives "at least" ten job opportunities per printing graduate and believes that the demand for graduate printers will increase.
6. Future plans include expansion in letterpress facilities and the adding of offset printing to the program.
7. Respondent would recommend printing management and printing education as areas of study, and that students be allowed to specialize in machine composition, presswork, estimating or similar areas in printing.

Florida Agricultural and Mechanical University. The Florida A. and M. University grants the Bachelor of Science degree to students who complete satisfactorily the Industrial Arts Plan I or Plan II curriculum; maintain a "C" average (4-point system); successfully pass the English Proficiency examination and meet all other requirements of the university.

Industrial Arts Education is the work of the Department of Industrial Education at Florida A. and M. University. This department is one of four in the University's School of Education. Technical or laboratory courses, however, are offered by the Vocational-Technical Institute of the University. (12-195) Printing-option courses which support the Industrial Arts program, therefore, were offered under the area of Printing Technology and Management. (12-262)

The statement of purpose set forth by the college was:

The Department of Industrial Education has as its prime objective the development of leaders in this field. It is primarily responsible for planning and carrying out a functional program of industrial teacher education. It provides the professional courses and the necessary coordinating service for internship teaching and other professional teacher training experiences for both pre-service and in-service teachers.... (12-195)

The Industrial Arts Plans I and II were eight trimester programs requiring 128 and 134 semester hours respectively. (See Appendix C for curriculum listings.)

The Industrial Arts curriculum provided for approximately 45.31 per cent academic courses, 4.69 per cent business courses, 42.97 per cent technical courses and 7.03 per cent electives. The

percentage of general subject classifications and subjects in the Industrial Arts Plan I program are shown in Table 2. In this curriculum, then, the emphasis was definitely academic because 58 of the required 128 credits fell in the academic category.

Among the academic courses, the social sciences with 15 credits, mathematics and physics combined, representing the sciences, required 14 credit hours and education with 12 credits were the dominant subjects. English accounted for nine credits.

In the technical classification, industrial arts and technical sub areas combined accounted for 55 of the 128 required credits. The writer, however, was unable to determine dominant subjects in this area because technical sub areas consumed 33 of the 55 hours and specific technical subjects were not listed. (See Appendix C.)

Economics with six credits was the only course offered under the business classification.

The academic area, which accounts for 45.31 per cent of the total credits in this curriculum included such instruction as:

1. Personal and social adjustment, United States history and general and educational psychology.
2. Introduction to education, general study of American secondary schools, principles of teaching and measurement and evaluation.
3. Algebra, logarithms and trigonometric functions and general college physics.
4. Communicative skills and literature.
5. General physical education and recreation activities.
6. Military science and tactics.

Table 2. Florida A. and M. University's Industrial Arts
Plan I--Printing-option Curriculum--General
Classifications of Subject Offerings,
Credits and Percentage of Totals

Subjects and Classifications	*Credits	**Percentage of Totals
Academic		
English	9	7.03
Mathematics	6	4.69
Social Sciences	15	11.72
Physical Education	4	3.13
Physics	8	6.25
Education	12	9.38
Military Science	4	3.13
(Total Academic)	<u>58</u>	<u>45.31</u>
Business		
Economics	6	4.69
Technical		
Industrial Arts	22	17.19
Technical Sub Areas	<u>33</u>	<u>25.78</u>
(Total Technical)	<u>55</u>	<u>42.97</u>
Electives	<u>9</u>	<u>7.03</u>
Totals	128	100.00

*Semester hours.

**Percentage = Credits ÷ 128.

The 58 credits allotted for academic courses were .71 percentage points below average; business courses with six credits were .57 percentage points below average; technical courses with 55 credits were 1.07 percentage points above average and elective courses with nine credits were 1.21 percentage points above average. (See Tables 14 and 15 of this study.)

The emphasis on the academic and technical courses apparently is intended to provide students with academic and technical backgrounds needed in teaching the industrial arts.

The Industrial Arts Plan II curriculum, as listed in Table 3, was virtually the same as Plan I, except that six additional credits were required in the technical area and six more elective credits were required to make a total of 140 required hours under this curriculum as compared to 128 in Plan I. The semester hours added to the technical and elective classifications, however, did shift the emphasis from slightly academic to slightly technical for Plan II. The business area decreased in percentage value while electives increased. (See Table 15.) Industrial Arts Plan II allows for more concentration in the vocational specialty area.

The Industrial Arts Plans I and II at Florida A. and M. University are apparently meeting the purpose for which designed. It is evident, however, that Industrial Arts students come under two divisions, each with a separate purpose. Although these programs are under the supervision of the School of Education, requirements for "technical or laboratory courses" are met in the Vocational-Technical

Table 3. Florida A. and M. University's Industrial Arts
Plan II--Printing-option Curriculum--General
Classifications of Subject Offerings,
Credits and Percentage of Totals

Subjects and Classifications	*Credits	**Percentage of Totals
Academic		
English	9	6.21
Mathematics	6	4.28
Social Sciences	15	10.71
Physical Education	4	2.86
Physics	8	5.71
Education	12	8.57
Military Science	4	2.86
(Total Academic)	<u>58</u>	<u>41.43</u>
Business		
Economics	6	4.29
Technical		
Trade and Industrial		
Professional	22	15.71
Technical or Vocational		
Specialty	<u>39</u>	<u>27.86</u>
(Total Technical)	<u>61</u>	<u>43.57</u>
Electives	<u>15</u>	<u>10.71</u>
Totals	140	100.00

*Semester hours.

**Percentage = Credits ÷ 140.

Institute of the University. (12-195) For this reason, the purpose of the Vocational-Technical Institute is cited:

In keeping with its responsibility as a land-grant institution, the Florida Agricultural and Mechanical University, through its Vocational-Technical Institute, provides one of its major opportunities for students to fulfill that one of its seven objectives concerned with the development of those understandings and skills that are necessary to the business of making a living. (12-261)

The printing program, then, was part of the Vocational-Technical Institute of the University. This division of the University offered a "technical diploma" in Printing and Management. (12-267) The degree programs, however, were listed in the School of Education.

Information concerning the printing programs at Florida A. and M. University was restricted to the catalog of the school because the questionnaire was not returned.

Lincoln University. Lincoln University grants the Bachelor of Science degree to students who complete satisfactorily the Graphic Arts curriculum; maintain a "C" average (4-point system); successfully pass the English Proficiency and Senior Comprehensive Examinations and meet all other requirements of the University.

Printing instruction is the work of the Department of Mechanic Arts under the College of Arts and Sciences. The expressed objectives of this program were:

. . . to provide a general education; to provide general experiences and skills in printing and related fields and to provide technical knowledge needed for a functional career in the field of graphic arts.

The curriculum also provided for preparation for "Vocational Smith-Hughes" work, leading to the Bachelor of Science degree in Vocational Technical Education. (13-179)

The course in Graphic Arts was a four-year (eight semesters) program requiring 128 credits for graduation. (13-93)

The curriculum provided for approximately 46.09 per cent academic courses, 42.20 per cent technical courses, 7.03 per cent electives and 4.68 per cent business courses. The percentage of general subject classifications and subjects in the Graphic Arts program are shown in Table 4. In this curriculum, then, emphasis was slightly academic because 59 of the 128 required credits fell in the academic category.

English and social science dominated the academic area with 21 and 13 credits respectively. Mathematics and physics combined, representing the sciences, required 12 credit hours.

Table 4. Lincoln University's Graphic Arts Curriculum
 --General Classifications of Subject Offerings,
 Credits and Percentage of Totals

Subjects and Classifications	*Credits	**Percentage of Totals
Academic		
English	21	17.19
Mathematics	6	4.69
Physical Education	4	3.13
Hygiene	2	1.56
Military Science	4	3.13
Social Science	13	10.16
Physics	6	4.69
Physics or Psychology	3	2.34
(Total Academic)	<u>59</u>	<u>46.09</u>
Business		
Business Law	3	2.34
Economics	3	2.34
(Total Business)	<u>6</u>	<u>4.68</u>
Technical		
Drawing	3	2.34
Commercial Arts	3	2.34
Machine Composition	8	6.25
Typography & Presswork	8	6.25
Lab Maintenance	3	2.34
Estimating	3	2.34
Bookbinding	3	2.34
Shop Management	3	2.34
Vocational Printing	8	6.25
Photography	3	2.34
Photoengraving	3	2.34
Offset Principles	3	2.34
Industrial Relations	3	2.34
(Total Technical)	<u>54</u>	<u>42.50</u>
Electives	<u>9</u>	<u>7.03</u>
Totals	<u>128</u>	<u>100.00</u>

*Semester hours.

**Percentage = Credits ÷ 128.

Among the business courses, economics and business law with three credits each utilized the six credits allowed for this area.

In the technical classification, machine composition, typography and presswork and vocational printing with eight credits each were the dominant subjects.

The academic area, which accounted for 46.09 per cent of the total credits in this curriculum, includes such instruction as:

1. Communicative skills and literature.
2. Social science survey, personal and social adjustment and general psychology.
3. Basic mathematics, algebra and trigonometry.
4. Health and physical education activities.
5. Military science and tactics.

The 59 credits allotted for academic courses were .07 percentage points above average; business courses with six credits were 2.58 percentage points below average; technical courses with 54 credits were .30 percentage points above average and electives with nine credits were 2.21 percentage points above average. (See Table 15 of this study.)

The term "graphic arts" was used a bit "loosely" in that the expressed purpose of the course was to train printers. It is apparent, therefore, that the curriculum provides training for students who will work in the printing industry, rather than to meet the needs of students who will enter a broad area such as the graphic arts.

Other information bearing on the objectives of the general printing program at Lincoln University includes:

1. Two full-time instructors were currently employed to serve three freshmen, two juniors, three seniors and four terminal students.
2. The equipment, purchased new, was fairly adequate for general letterpress and offset instruction.
3. Respondent receives approximately ten job opportunities for students per year.
4. Future plans include offering printing as a minor to industrial arts majors.

Mississippi Vocational College. The Mississippi Vocational College grants the Bachelor of Science degree to students who complete satisfactorily the Technical Education-Printing Curriculum; maintain a "C" average (3-point system); successfully pass the English Proficiency and General College examinations; complete a Senior Project (research or practical experiment in written form) and meet all other requirements of the college.

Printing instruction was the work of the Department of Printing at Mississippi Vocational College. This department was a component of the Division of Trades, Industries and Applied Arts at this institution. Technical Education-Printing was the only degree-level printing course of study offered. (13-159)

The expressed purpose of the program was to train students primarily for industry; to provide them with knowledge and skills necessary for gaining employment and advancement in industry and to enable them to live as useful and progressive citizens. (13-159)

The course in Technical Education-Printing was a four-year (12 quarters) program requiring 236 credits for graduation. (13-177)

Mississippi Vocational College was the only institution in this study utilizing the quarter system. Other institutions included in this study use the semester system.

The curriculum provided for approximately 37.17 per cent academic courses, 14.60 per cent business courses and 48.23 per cent technical courses. The percentages of general subject classifications and subjects in the Technical Education-Printing program are shown in Table 5. In this curriculum, then, emphasis was

Table 5. Mississippi Vocational College's Technical
Education--Printing Curriculum--General
Classifications of Subject Offer-
ings, Credits and Percentage
of Totals

Subjects and Classifications	*Credits	**Percentage of Totals
Academic		
English	24	10.17
Mathematics	9	3.81
Social Sciences	18	7.63
Orientation	0	0.00
Physical Education	6	2.54
Science	24	10.17
Hygiene	3	1.27
(Total Academic)	84	37.17
Business		
Typing	3	1.27
Bookkeeping	9	3.81
Economics	6	2.54
Business Law	6	2.54
Labor Problems	3	1.27
Business Management	3	1.27
Salesmanship	3	1.27
(Total Business)	33	14.60
Technical		
Typography	18	7.63
Presswork	18	7.63
Drawing	2	0.85
Methods & Materials	3	1.27
Ind. Apprentice Pract.	6	2.54
Commercial Arts	6	2.54
Machine Composition	12	5.08
Journalism	9	3.81
Proofreading	3	1.27
Estimating	6	2.54
Mechanics of Newspapers	3	1.27
Senior Project	3	1.27
Internship	30	12.71
(Total Technical)	119	48.23
Totals	236	100.00

*Quarter hours.

**Percentage = Credits ÷ 236.

definitely technical because 119 of the 236 required credits fell in the technical category.

The Division of Trades, Industries and Applied Arts at Mississippi Vocational College employed an internship program. This program placed printing students in printing firms in order that they might gain on-the-job experience. The internship program with 30 credits dominated the technical area. (Mississippi Vocational College was the only college in this study utilizing the internship program.) Among technical subjects, however, typography, presswork, machine composition and journalism were the dominant subjects with 18, 18, 12 and nine credits respectively.

In the business classification, bookkeeping, business law and business management were the dominant subjects and accounted for more than half of the 33 credits.

Among the academic courses, English with 24 credits, science with 24 credits and social science with 18 credits were dominant.

The technical area, which accounted for 48.23 per cent of the total credits in this curriculum, included such instruction as:

1. Fundamental mechanical drawing.
2. Principles of layout, design and practice in hand composition.
3. Color, display and lettering.
4. Operation of composing machines.
5. Techniques and procedures in printing press operation.
6. Procedures for collecting and writing the news.
7. Job cost and estimation.

8. Newspaper design and make-up.
9. Proofreading and copy preparation.

In addition to the four-year program at Mississippi Vocational College, a two-year course of study was offered. (See Appendix C.) The two-year printing course, however, was not college-level work. This course was designed primarily for veterans and no credits were given. (13-193, 206)

The courses of study in printing at Mississippi Vocational were implemented in a printing laboratory consisting of slug-casting machines, handfed platen presses, an automatic platen press, automatic cylinder presses and an offset duplicator. "Supporting equipment" included general composing and bindery machines.

Other information bearing on the objectives of the general printing program at Mississippi Vocational College included:

1. Three full-time instructors were currently employed to instruct one freshman, two sophomores, one junior, one senior and 12 industrial arts students.
2. The printing program was basically letterpress with one offset presswork course offered.
3. Equipment was generally purchased used and considered fairly adequate for instructional purposes by respondent.
4. Future plans include renovations for additional floor space and expansion in offset facilities.

Prairie View Agricultural and Mechanical College. The Prairie View A. and M. College grants the Bachelor of Science degree to students who complete satisfactorily one of the Vocational-Industrial Education (Plans I or II) or the Industrial Arts Education (Plans I or II) curricula; maintain a "C" average (4-point system); successfully pass the English Proficiency examination; complete an essay and meet all other requirements of the college.

The Industrial Arts and Industrial Education programs were both offered in the Division of Industrial Education at Prairie View A. and M. College. (15-35, 148)

The statement of purpose for the Industrial Education programs as set forth by the college was:

1. To prepare students to enter various industrial occupations.
2. To allow students to enter a two-year course in Vocational Industrial Education.
3. To provide special technical courses for the occupational choice of students.
4. To prepare vocational-industrial teachers for the secondary school.
5. To offer courses to in-service teachers to enable them to meet state certification as trade and industrial teachers. (15-152)

The course in Industrial Education Plan I was a four-year (eight semesters) program requiring 145 credits for graduation. (15-152)

The curriculum provided for approximately 42.76 per cent academic courses, 17.24 per cent business courses and 40.00 per

cent technical courses. The percentage of general subject classifications and subjects are shown in Table 6. In this curriculum, then, emphasis was definitely technical because 62 of the 145 required credits fell in the technical category.

The social sciences with 18 credits, science with 16 credits and English with 12 credits were dominant in the academic area.

Accounting and personnel management with six credits each were dominant courses in the business category.

In the technical classification, presswork with 16 credits, machine composition with 13 credits and typography with ten credits were dominant courses.

The academic area, which accounted for 42.76 per cent of the total credits in this curriculum, included such instruction as:

1. Communicative skills and literature.
2. Fundamentals of algebra and geometry.
3. History of the United States, social and personal adjustment and social psychology.
4. Introduction to chemistry and applied science.
5. Industrial orientation.
6. Physical education and recreational activity.
7. Military science and tactics.

The 62 credits allotted for academic courses were 3.26 percentage points below average; business courses with 23 credits were 9.98 percentage points above the average and technical courses with 58 credits were 1.90 percentage points below the average. (See Tables 14 and 15 of this study.)

Table 6. Prairie View A. and M. College's Industrial
Education Plan I--Printing-option Curriculum--
General Classifications of Subject Offer-
ings, Credits and Percentage of Totals

Subjects and Classifications	*Credits	**Percentage of Totals
Academic		
Mathematics	6	4.14
English	12	8.28
Orientation	2	1.38
Science	16	11.03
Social Sciences	18	12.42
Military Science	4	2.79
Physical Education	4	2.79
(Total Academic)	62	42.76
Business		
Economics	3	2.07
Accounting	6	4.14
Business Law	3	2.07
Personnel Management	6	4.14
Labor Problems	3	2.07
Typing	4	2.79
(Total Business)	25	17.24
Technical		
Drafting	6	4.14
Typography	10	6.93
Presswork	16	11.03
Graphic Arts Survey	3	2.07
Machine Composition	13	8.97
Bindery Operations	1	.69
Estimating	2	1.38
Plant Management	3	2.07
Printing Production	4	2.79
(Total Technical)	58	40.00
Totals	145	100.00

*Semester hours.

**Percentage = Credits ÷ 145.

Industrial Education Plan II was designed for students who have completed a minimum of three years as a journeyman in a "recognized trade or technical field." This curriculum required 90 semester hours. (15-142)

The curriculum provided for approximately 51.11 per cent academic courses, 28.89 per cent technical courses and 20.00 per cent elective courses. The percentages of general subject classifications and subjects in the Industrial Education Plan II are shown in Table 7. In this curriculum, then, emphasis was definitely academic because 46 of the 90 required credits fell in the academic category.

Among academic courses, sciences carried 19 credits, English 12 credits, social science nine credits and mathematics six credits. The emphasis in the academic area was on science.

In the technical area, industrial education was allotted 26 credits. The writer, however, was not able to determine specific subjects for this category. (See Appendix C.)

The academic area, which accounted for 51.11 per cent of the total credits in this curriculum, included such instruction as:

1. Fundamentals of algebra and geometry.
2. Social and personal adjustment and U. S. history.
3. Introduction to physics.
4. Communicative skills and literature.

The 46 credits allotted for academic courses were 5.09 percentage points below average; the business area was 7.26 percentage

Table 7. Prairie View A. and M. College's Industrial
Education Plan II--Printing-option Curriculum--
General Classifications of Subject Offer-
ings, Credits and Percentage of Totals

Subjects and Classifications	*Credits	**Percentage of Totals
Academic		
English	12	13.33
Mathematics	6	6.67
Science	19	21.11
Social Science	9	10.00
(Total Academic)	<u>46</u>	<u>51.11</u>
Technical		
Industrial Education	26	28.89
Electives	<u>18</u>	<u>20.00</u>
Totals	90	100.00

*Semester hours.

**Percentage = Credits ÷ 90.

points below average because no business courses were provided in the curriculum; technical courses with 26 credits were 13.03 percentage points below average and electives with 18 credits were 15.18 percentage points above average. (See Tables 14 and 15.)

The Industrial Education Plans I and II were not closely related. Plan I required 145 credits for graduation compared to 90 credits for Plan II. Business courses were not provided in Plan II; however, 25 business credits were required in the Plan I curriculum. Electives were omitted from Plan I, but Plan II required 18 elective credits.

Due to differences of these programs and the general statements of purpose, the writer was not able to determine how effective the programs were in relation to purpose. It is evident, however, that these programs do not affect purpose number 2, to allow students to enter a two-year course in Vocational-Industrial Education.

A two-year program, however, was offered at this institution. (See Appendix C.) Students enrolled in the two-year program, after completion of the two years, could convert to one of the four-year programs. (15-153)

The statement of purpose of the Industrial Arts curricula as set forth by the college was:

The Industrial Arts Curricula are designed to offer experiences for the following purposes: (1) To prepare young men and women as teachers of Industrial Arts Education at the elementary, junior or high school level; (2) To assist persons to become supervisors, coordinators and directors of Industrial Arts programs and (3) To assist

students who might wish to develop a hobby, develop elementary skills in using tools and industrial materials or increase their general understanding, knowledge and appreciation of the industrial world in which they live. (15-148)

The Industrial Arts Plan I was a four-year (eight semesters) program requiring 128 credits for graduation. The curriculum, however, provided for 126 credits. (11-156)

The curriculum provided for approximately 46.83 per cent academic courses, 34.13 per cent technical courses and 19.04 per cent elective credits. (See Table 8.) In this curriculum, the emphasis was definitely academic because 59 of the required 126 credits fell in the academic category.

In the technical area 26 of the 43 credits were consumed by industrial lab, industrial arts accounted for 15 credits and drafting consumed the remaining six credits. The writer, however, was not able to determine specific subjects which would support the general areas of industrial arts and industrial lab. (See Appendix C.)

The curriculum did not provide for business courses.

Among the academic courses, science, English and education were dominant courses with 16, 12 and nine credits respectively.

Electives were provided in the curriculum to allow students to choose a "minor."

The academic area, which accounted for 46.83 per cent of the total credits in this curriculum, included such instruction as:

1. Communicative skills and literature.
2. Fundamentals of algebra and geometry.

Table 8. Prairie View A. and M. College's Industrial Arts
Plan I--Printing-option Curriculum--General
Classifications of Subject Offerings,
Credits and Percentage of Totals

Subjects and Classifications	*Credits	**Percentage of Totals
Academic		
Mathematics	6	4.76
English	12	9.52
Orientation	2	1.59
Military Science	4	3.52
Physical Education	4	3.52
Science	16	12.35
Education	9	7.14
Social Science	6	4.76
(Total Academic)	<u>59</u>	<u>46.83</u>
Technical		
Drafting	6	4.76
Industrial Arts	15	11.91
Industrial Lab	26	20.63
(Total Technical)	<u>43</u>	<u>34.13</u>
Electives	<u>24</u>	<u>19.04</u>
Totals	126	100.00

*Semester hours.

**Percentage = Credits ÷ 126.

3. U. S. History.

4. Physics.

The 59 credits allotted for academic courses were .81 percentage points above the average; the business area was 7.26 percentage points below the average because no business courses were provided in the curriculum; technical courses with 43 credits were 7.87 percentage points below the average and the 24 elective credits were 14.22 percentage points above the average. (See Tables 14 and 15.)

The Industrial Arts Plan II curriculum, as listed in Table 9, was virtually the same as Plan I except that 13 additional hours were required in the industrial lab work and only six hours were assigned to electives. A total of 125 credits was required for Plan II as compared with 126 credits in Plan I. The 13 semester hours added to the technical area, however, did shift the emphasis from academic to slightly technical.

The academic and technical areas increased in percentage value while electives decreased. (See Table 15.) This Plan does not allow students to minor.

Information concerning the printing programs at Prairie View A. and M. College was restricted to the catalog of the school because the questionnaire was not returned.

Because there were no business courses in the curriculum, purpose number 2 was not fully met.

Table 9. Prairie View A. and M. College's Industrial Arts
Plan II--Printing-option Curriculum--General
Classifications of Subject Offerings,
Credits and Percentage of Totals

Subjects and Classifications	*Credits	**Percentage of Totals
Academic		
Mathematics	6	4.80
English	12	9.60
Orientation	2	2.40
Military Science	4	4.80
Physical Education	4	4.80
Science	16	12.80
Education	9	7.20
Social Science	6	4.80
(Total Academic)	59	47.20
Technical		
Drafting	6	4.80
Industrial Arts	15	12.00
Industrial Lab	39	31.20
(Total Technical)	60	48.00
Electives	6	4.80
Totals	125	100.00

*Semester hours.

**Percentage = Credits ÷ 125.

Southern University and Agricultural and Mechanical College.

The Southern University and A. and M. College grants the Bachelor of Science degree to students who complete satisfactorily the Technical Education-Printing curriculum; maintain a "C" average (4-point system); successfully pass the Senior Comprehensive examination and meet all other requirements of the college.

Printing instruction is the work of the Printing Department. This department is one of four in the College's Division of Industrial Technology. Technical Education-Printing was the only printing course of study offered by the institution. (16-130, 134)

The statement of purpose set forth by the college was: "This curriculum is designed for those individuals who do not desire to teach but desire to follow regular production or commercial work."

The course in Technical Education-Printing was a four-year (eight semesters) program requiring 128 credits for graduation. The minimum credits for graduation were 124. (16-60)

The curriculum provided for approximately 37.50 per cent academic courses, 11.71 per cent business courses and 50.79 per cent technical courses. The percentages of general subject classifications and subjects in the Technical Education-Printing program are shown in Table 10. In this curriculum emphasis was definitely technical because 65 of the 128 required credits fell in the technical category.

Printing production with 15 credits was the dominant subject in the technical area.

Table 10. Southern University and A. and M. College's
Technical Education--Printing Curriculum--General
Classifications of Subject Offerings, Credits
and Percentage of Totals

Subjects and Classifications	*Credits	**Percentage of Totals
Academic		
English	12	9.37
Mathematics	9	7.03
Science	12	9.37
Physical Education	4	3.13
Military Science	8	6.24
Orientation	1	0.78
Social Science	<u>2</u>	<u>1.56</u>
(Total Academic)	48	37.50
Business		
Commerce	12	9.37
Economics	<u>3</u>	<u>2.34</u>
(Total Business)	15	11.71
Technical		
Art	8	6.24
Typography	5	3.90
Presswork	9	7.03
Machine Composition	6	4.68
Printing Production	15	11.71
Photo Engraving	3	2.34
Offset Lithography	7	5.47
Drawing	3	2.34
Journalism	3	2.34
Estimating	<u>3</u>	<u>2.34</u>
(Total Technical)	65	50.78
Totals	128	100.00

*Semester hours.

**Percentage = Credits ÷ 128.

Among the academic courses, English with 12 credits, science with 12 credits and mathematics with nine credits were dominant subjects.

In the business area, commerce consumed 12 of the 15 credits.

The technical area, which accounted for 50.79 per cent of the total credits in this curriculum, included such instruction as:

1. Estimating, planning, scheduling and laboratory experiences.
2. General press operation, make-ready and imposition.
3. Offset lithography, theory and practice.
4. Principles of operation of the composing machines.
5. Job cost and estimation.
6. Introduction to journalism.
7. Theory of color, principles of design and lettering.

The 48 credits allotted for academic courses were 8.52 percentage points below average; business courses with 15 credits were 5.45 percentage points above average and technical courses with 65 credits were 1.89 percentage points above average. (See Tables 14 and 15 of this study.)

The emphasis on the technical area in this curriculum apparently was intended to provide students with technical backgrounds needed in the printing industry.

The course of study in printing at Southern University was implemented in a printing laboratory consisting of slug-casting machines, handfed platen presses, automatic platen presses, an automatic cylinder press and an offset press. "Supporting

equipment" included general composing and bindery machines.

Other information bearing on the objectives of the general printing program at Southern University and A. and M. College included:

1. Three full time instructors were currently employed to serve six freshmen, two sophomores, six juniors, three seniors and 20 industrial arts students.
2. All equipment, according to respondent, was purchased new and was rated "fairly adequate" for curriculum purposes.
3. Respondent received 12 to 15 job opportunities for students per year.
4. Respondent believes that the demand for graduate printers will increase.
5. Future plans include offering courses in printing management.
6. Respondent would recommend printing management or printing engineering as areas of study.

Texas Southern University. The Texas Southern University grants the Bachelor of Science degree to students who complete satisfactorily the Industrial Education curriculum; maintain a "C" average and meet all other requirements of the college.

Industrial Education was offered in the School of Vocational and Industrial Education at Texas Southern University. The statement of purpose set forth by the college was:

The major objectives of the School of Vocational and Industrial Education are to train the students to achieve the mechanical skill, technical knowledge and understanding of socio-industrial relations necessary for effective employment. (17-149)

The course in Industrial Education was a four-year (eight semesters) program requiring 130 credits for graduation. (17-149)

The curriculum provided for 47.69 per cent academic and 52.31 per cent technical. The percentages of general subject classifications and subjects in the Industrial Education curriculum are shown in Table 11. In this curriculum, then, emphasis was definitely technical because 68 of the 130 required credits fell in the technical category.

Among academic subjects, social science with 18 credits, science with 12 credits and English with 12 credits were the dominant subjects.

Due to "program options," the writer was not able to determine specific subjects for the general subject areas in the technical area.

Table 11. Texas Southern University's Industrial
Education--Printing Curriculum--General
Classifications of Subject Offer-
ings, Credits and Percentage
of Totals

Subjects and Classifications	*Credits	**Percentage of Totals
Academic		
English	12	9.32
Mathematics	6	4.62
Physical Education	4	3.08
Health	4	3.08
Education	6	4.62
Science	12	9.23
Social Science	<u>18</u>	<u>13.85</u>
(Total Academic)	62	47.69
Technical		
Drafting	7	5.38
Carpentry	25	19.23
Industrial Education	24	18.46
Technical Electives	<u>12</u>	<u>9.23</u>
(Total Technical)	<u>68</u>	<u>52.31</u>
Totals	130	100.00

*Semester hours.

**Percentage = Credits ÷ 130.

The 62 credits allotted for academic courses were 1.67 percentage points above average, and the 68 credits allotted for technical courses were 10.41 percentage points above average. (See Tables 14 and 15.)

It was apparent that this curriculum was meeting the purpose for which it was designed.

The curriculum was technical and academic with no business courses. The purpose was "mechanical and technical."

The percentage of general subject classifications and units for the Technical Training Curriculum appear in Table 16. The curriculum provides for approximately 11.17 per cent general subject, 12.50 per cent technical subject, and 76.33 per cent technical subject. The emphasis was definitely academic because 11 of the 113 credits required for graduation fell in the academic category.

Among the academic courses, English with 12 credits and mathematics with 12 credits were the dominant subjects. Science with 12 credits is also in this area.

With 12 credits the dominant in the business area. Language with nine credits was dominant in the technical area.

West Virginia State College. The West Virginia State College grants the Bachelor of Science degree to students who complete satisfactorily the Technical Science-Printing or the Industrial Arts Education curricula; maintain a "C" average (4-point system); successfully pass the Senior Comprehensive examination and meet all other requirements of the college.

Printing at West Virginia State College is under the Division of Applied Arts and Sciences. This institution had two degree-programs in the printing area. One program was Technical Science which was designed primarily to train printing managers. The other program was a printing option in the Industrial Arts program. The purposes of these programs, however, were not clearly stated. (18-18, 85)

The percentages of general subject classifications and subjects for the Technical Science-Printing curriculum appear in Table 12. The curriculum provides for approximately 51.13 per cent academic courses, 15.04 per cent business courses and 33.83 per cent technical courses. The emphasis was definitely academic because 68 of the 133 credits required for graduation fell in the academic category.

Among the academic courses, English with 12 credits and mathematics with 18 credits were the dominant subjects. Electives were allotted 12 credits in this area.

Economics with 14 credits was dominant in the business area.

Typography with nine credits was dominant in the technical area.

Table 12. West Virginia State College's Technical Science
 --Printing Curriculum--General Classifications of
 Subject Offerings, Credits and
 Percentage of Totals

Subjects and Classifications	*Credits	**Percentage of Totals
Academic		
English	12	9.02
Mathematics	18	13.53
Orientation	2	1.46
Social Science	3	2.26
Physical Education	4	3.01
Military Science	6	4.52
Electives	12	9.02
Health	1	0.75
Science	10	7.52
(Total Academic)	68	51.13
Business		
Business Administration	14	10.52
Economics	6	4.52
(Total Business)	20	15.04
Technical		
Drawing	6	4.52
Typography	9	6.77
Presswork	6	4.52
Bindery	6	4.52
Photo Procedures	6	4.52
Copy Editing	3	2.26
Machine Composition	6	4.52
Estimating	3	2.26
(Total Technical)	45	33.83
Totals	133	100.00

*Semester hours.

**Percentage = Credits ÷ 133.

In the technical area, shop registration with 12 credits was dominant. Specific subjects offered in the printing shop for this curriculum were not determined.

The academic area, which accounted for more than half of the total credits in this curriculum, included such instruction as:

1. Communicative skills and literature.
2. Algebra, geometry and trigonometry.
3. Health and recreation.
4. Chemistry and physics.
5. College orientation.
6. Social and personal adjustment.
7. Military science and tactics.

The 68 credits allotted for academic courses were 5.11 percentage points above average; business courses with 20 credits were 7.98 percentage points above average and technical courses with 45 credits were 8.07 percentage points above average. (See Tables 14 and 15 of this study.)

The Industrial Arts curriculum at West Virginia State College had two basic areas, academic and technical. The academic area included approximately 76.19 per cent academic courses and 23.81 per cent technical. The curriculum, then, was definitely academic. (See Table 13 of this study.)

The academic area shows that education with 21 credits, science with 16 credits, social science with 13 credits and English with 12 credits were dominant subjects.

In the technical area, shop concentration with 12 credits was dominant. Specific subjects offered in the printing shop for this curriculum were not determined.

Table 13. West Virginia State College's Industrial Arts
Education--Printing-option Curriculum--General
Classifications of Subject Offerings,
Credits and Percentage of Totals

Subjects and Classifications	*Credits	**Percentage of Totals
Academic		
English	12	9.95
Mathematics	6	4.77
Social Science	13	10.32
Orientation	2	1.59
Physical Education	4	3.17
Military Science	6	4.77
Electives	12	9.95
Science	16	12.38
Music	2	1.59
Education	21	16.37
Art Appreciation	2	1.59
(Total Academic)	<u>96</u>	<u>76.19</u>
Technical		
Drawing	6	4.77
Sheet Metal	3	2.38
Woodwork	6	4.77
Gen. Shop (Crafts)	3	2.38
Shop Concentration	<u>12</u>	<u>9.95</u>
(Total Technical)	<u>30</u>	<u>23.81</u>
Totals	126	100.00

*Semester hours.

**Percentage = Credits ÷ 126.

The academic area, which accounted for 76.19 per cent of the total curriculum, included such instruction as:

1. Communicative skills and literature.
2. Algebra, geometry and trigonometry.
3. Health and recreation.
4. Chemistry and physics.
5. Principles of teaching and principles of education.
6. Social and personal adjustment.
7. Music and art.
8. Military science and tactics.

The 96 credits allotted for academic courses were 30.17 percentage points above average, and the 30 credits in the technical area were 18.09 percentage points below average. (See Tables 14 and 15.)

It is apparent that this course does meet the purpose of teacher-training because of the hours allotted to the academic area. The curriculum, however, does not allow for business courses.

Terminal programs were offered also by West Virginia State College. (See Appendix C.) A diploma was offered in the two-year terminal program and a certificate was awarded for completion of the intensive courses. (18-81, 85)

The courses of study in printing at West Virginia State College were implemented in a printing laboratory consisting of slug-casting machines, handfed platen presses, automatic platen presses, automatic cylinder presses, an handfed cylinder press and an offset

duplicator. "Supporting equipment" included general composing and bindery machines.

Other information bearing on the objectives of the general printing program at West Virginia State College includes:

1. One full-time and three part-time instructors were employed to serve four freshmen, five sophomores and 15 industrial students.
2. Printing instructors are required to qualify for teaching with two years experience in the printing industry and a Bachelor's degree with a major in printing.
3. Equipment was fairly adequate for curriculum purposes and was purchased new.
4. Respondent receives five job opportunities per graduate student per year.
5. Future plans include adding offset instruction to the program.
6. Respondent would recommend printing education as an area of study.

Table 14. Mean of Academic, Business, Technical and Elective Courses
and Total Semester Hours of the Various Printing Programs at
Negro Universities and Colleges Cited in this Study

College or University and Curriculum Name	Semester Hours of Course Areas				Total
	Academic	Business	Technical	Electives	Semester Hours
Alabama A. and M. College Printing Production and Management	42	22	66	--	130
Florida A. and M. University Industrial Arts Plan I	58	6	55	9	128
Industrial Arts Plan II	58	6	61	15	140
Lincoln University Graphic Arts	59	6	54	9	128
Mississippi Vocational College Technical Education	56	22	72.66	--	*150.66
Prairie View A. and M. College Industrial Education Plan I	62	25	58	--	145
Industrial Education Plan II	46	--	26	18	90
Industrial Arts Plan I	59	--	43	24	126
Industrial Arts Plan II	59	--	60	6	125
Southern University Technical Education	48	15	65	--	128
Texas Southern University Industrial Arts	62	--	68	--	130
West Virginia State College Technical Science	68	20	45	--	133
Industrial Arts	96	--	30	--	126
Totals	773	122	703.66	81	1679.66
Percent of Average	46.02 %	7.26 %	41.90 %	4.82 %	100.00%

*Quarter hours converted to semester hours using a 1.5 conversion factor.

Table 15. Percentage of Total Academic, Business, Technical and Elective Semester Hours Required in the Various Printing Programs at Negro Universities and Colleges Cited in this Study

College or University	Percentage of Course Areas			
	Academic	Business	Technical	Electives
Alabama A. and M. College				
Printing Production and Management	32.32	16.92	50.76	----
Florida A. and M. University				
Industrial Arts Plan I	45.31	4.69	42.97	7.03
Industrial Arts Plan II	41.43	4.29	43.57	10.71
Lincoln University				
Graphic Arts	46.09	4.68	42.20	7.03
Mississippi Vocational College				
Technical Education	37.17	14.60	48.23	----
Prairie View A. and M. College				
Industrial Education Plan I	42.76	17.24	40.00	----
Industrial Education Plan II	51.11	----	28.89	20.00
Industrial Arts Plan I	46.83	----	34.13	19.04
Industrial Arts Plan II	47.20	----	48.00	4.80
Southern University				
Technical Education	37.50	11.71	50.79	----
Texas Southern University				
Industrial Arts	47.69	----	52.31	----
West Virginia State College				
Technical Education	51.13	15.04	33.83	----
Industrial Arts	76.19	----	25.81	----
Mean Per Cent	46.02	7.26	41.90	4.82

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Summary. This study revealed that degree-granting programs among Negro institutions show considerable variation in percentage allowance for academic, business and technical training offered to students.

Program concepts at Negro institutions included in this study were:

1. Alabama A. and M. College--Printing Production and Management.
2. Florida A. and M. University--Industrial Arts.
3. Lincoln University--Graphic Arts.
4. Mississippi Vocational College--Technical Education.
5. Prairie View A. and M. College--Industrial Education and Industrial Arts.
6. Southern University and A. and M. College--Technical Education.
7. Texas Southern University--Technical Education.
8. West Virginia State College--Technical Science and Industrial Arts.

The program concepts listed above may be classified into three categories. These are: (1) teacher training, (2) vocational-technical education and (3) a combination of numbers (1) and (2).

Industrial Arts programs cited in this study were primarily for training teachers. These programs fell into the teacher training category. Among the teacher training programs at Negro institutions included in this study, the emphasis shifted from academic to technical. For example, in Florida A. and M. University's

Industrial Arts curricula, the Industrial Arts Plan I was 45.31 per cent academic to 42.97 per cent technical as compared with 43.57 per cent technical to 41.43 per cent academic in Plan II. The same example was true for the Industrial Arts curricula at Prairie View A. and M. College.

Business courses were offered in the Industrial Arts curricula at Florida A. and M. University. No business courses, however, were offered in the Industrial Arts programs at Prairie View or West Virginia State. Percentage of electives in the Industrial Arts programs at these institutions also varied.

Printing Production and Management and Technical Education programs fell into the vocational-technical category. These programs were generally consistent in emphasizing technical subjects.

Graphic Arts and Industrial Education curricula cited in this study were dual purpose programs and fell into the combination (third) category. Emphasis shifted in this category similar to the teacher-training category. (See Table 15 of this study.)

Other general findings as a result of the study were:

1. Stated purposes, when printed in the catalogs of the institutions included in this study, were general.
2. Letterpress instruction was predominant at Negro institutions among technical subjects.
3. Job opportunities exceed number of graduates available for work.
4. Business courses were not offered in six of the eight Industrial Arts programs.

Conclusions. The following conclusions were made as a result of this study:

1. There is a need for defining and re-defining program concepts relative to purpose and implementation at Negro institutions included in this study.
2. Differences of emphasis on academic, business and technical subjects offered in the curricula at the institutions studied did not reflect lack of facilities.
3. If graduates of these schools are to become leaders in society, business courses should be offered in the curricula.
4. There is a need for coordination among Negro institutions to effect better programs for printing students.
5. There is a need to encourage more young people to enter the printing profession.

Recommendations. It is recommended, as a result of this study, that the following be given consideration in structuring degree-level printing curricula:

1. That institutions clearly define program context and state specific purposes of curricula.
2. That percentages of academic, technical and business courses be established in direct relation to the purpose of the program.
3. That business courses be added to curricula sufficient to the needs of printers in modern society.
4. That curricula construction meet the needs of industry and society.
5. That Negro collegiate programs give added emphasis to printing management and technology.
6. That further studies include all American Universities and Colleges with more penetration into curricula analysis.

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APPENDIX A

EXAMPLE OF COVERING LETTER ACCOMPANYING
EACH QUESTIONNAIRE

May 9, 1963

Printing Department
Florida A. & M. University
Tallahassee, Florida

Dear Sir:

For partial fulfillment of the requirements for the degree Master of Science in Printing Management at South Dakota State College, I have chosen to do an analysis, for my thesis, of Negro Colleges and Universities currently offering the degree Bachelor of Science in some phase of printing or the graphic arts.

It is my hope that this study will determine the kind and scope of programs available, and whether these programs are growing or declining.

Please forward completed questionnaire at the earliest possible date. Any additional information you might send to enrich this study (e.g., a departmental brochure) will be helpful. However, if you do not offer any phase of printing, complete question number one (1) and return the questionnaire.

Your attention and early reply will be appreciated.

Very truly yours,

Ford Ratcliff, Jr.

Enc. (2) of printing? For example, linotype, presswork, etc.

APPENDIX B

EXAMPLE OF AN INDIVIDUAL QUESTIONNAIRE

SENT TO EACH SCHOOL

GRAPHIC ARTS QUESTIONNAIRE

1. Do you offer courses in the general printing area?
 - a. _____ Yes
 - b. _____ No
2. Do you offer a degree with a major in Printing?
 - a. _____ Yes
 - b. _____ No
3. If you answer yes to questions one (1) or two (2), in what areas do you offer the degree?
 - a. _____ Industrial Arts
 - b. _____ Technical Education
 - c. _____ Printing Management
 - d. _____ Printing Education (teacher training)
 - e. _____ Other--If other, What?
4. What would you say are the main objectives of your program (s)?
(Please list)
5. Does your curriculum allow students to concentrate in a specific area of printing? For example, linotype, presswork, etc.
 - a. _____ Yes
 - b. _____ No

6. Is a minor curriculum offered in areas other than printing?
For example, English, education, business, etc.
- a. _____ Yes
- b. _____ No
7. Do you offer a terminal printing course?
- a. _____ Yes
- b. _____ No
8. If you answer yes to question seven (7), is your terminal program
- a. _____ One year?
- b. _____ Two years?
- c. _____ Other--If other, What? _____
9. If you offer a terminal printing program, how is this program geared to train students?
- a. _____ As Craftsmen
- b. _____ Printing Managers
- c. _____ Other--If other, What? _____
10. How many students are presently enrolled in your printing courses?
- a. Degree program (s)
1. _____ Freshmen
2. _____ Sophomores
3. _____ Juniors
4. _____ Seniors

b. Terminal program (s)

1. _____ Veterans
2. _____ Non-veterans
3. _____ Rehabilitation
4. _____ Others--If others, What? _____

c. _____ Total number of all students served by your department. (Include students from other areas, if served by your department.)

11. How many instructors on your staff (number) teach printing courses?

- a. _____ Full time
- b. _____ Part time

12. What educational or industrial qualifications are required of your instructors? (Please list)

13. What basic equipment does your printing laboratory include?

	: Number :		: Number :
	: :		: :
	: :		: :
Automatic slug	: :	Handfed	: :
casters _____	: :	Platen _____	: :
	: :		: :
	: :		: :
Ludlows or equiv-	: :	Automatic	: :
alent _____	: :	Platen _____	: :
	: :		: :
Strip casters _____	: :	Automatic	: :
	: :	Cylinder _____	: :
	: :		: :
	: :		: :
Monotypes or	: :	Handfed	: :
equivalent _____	: :	Cylinder _____	: :
	: :		: :
Teletypesetters _____	: :	Offset Presses _____	: :

	: Number :
	:
	:
	:
Folding Machine	:
	:
Paper Drill	:
	:
Power Paper Cutter	:
	:
Wire Stitcher	:
	:
Perforator	:

14. Other basic equipment not included above. (Please list)

15. For your curriculum purposes, is your equipment:

- a. _____ Adequate
- b. _____ Fairly adequate
- c. _____ Inadequate

16. How do you acquire most of your printing equipment?

- a. _____ Gift
- b. _____ Loan
- c. _____ Lease
- d. _____ Purchase (New)
- e. _____ Purchase (Used)

17. Do you have any future plans which call for changes in your printing program?
- a. _____ No contemplated changes
- b. _____ Changes in plan. If so, in what way? _____

18. Do you feel that the need for printing graduates in general will:
- a. _____ Increase greatly
- b. _____ Increase moderately
- c. _____ Remain the same
- d. _____ Decrease moderately
- e. _____ Decrease greatly
19. Which of the following areas of study would you recommend for a student interested in a career in printing? (Check one)
- a. _____ Printing Management
- b. _____ Industrial Arts
- c. _____ Printing Education (Graphic Arts)
- d. _____ Other--If other, what? _____

20. Approximately how many job opportunities for your graduates and terminal students do you receive annually?
- _____ Number

21. If you were free to change your course content in printing, what changes would you make? (Please list).

REVISION OF CURRICULUM

Division I. and II. College-Preparatory System

(Printing Production and Management)

Division I

Subject	Credit
Art Appreciation 2015	2
Freshman English 2011-12	3-3
Freshman Mathematics 2011-12	3-3
Health and Physical Education 2011	3-3
Orientation 2000	0-0
Editorial Writing 2017	3-3
Introduction to Sociology 2021	3-3
Chemistry 2011-12	3-3
World History 2011-12	3-3
Federal Government 2015	3-3
General Psychology 2021	3-3
Psychology for Industry and Industry 2032	3-3

Division II

Introduction 2011-12	2-2
Introduction to Accounting 2022	3-3
Principles of Accounting 2023	3-3
Business Law 2024	3-3
Principles of Advertising 2025	3-3
Business Law 2026	3-3
Principles of Accounting 2027	3-3

Technical

Typography 2011-12	2-2
Printer's Production 2011-12	2-2
Printing Industry and Processes 2015	3-3
Introduction to History of Printing 2016	3-3
Mechanical Drawing 2011-12	3-3

Students

APPENDIX C

BREAKDOWN OF CURRICULUM

Alabama A. and M. College--Semester System

(Printing Production and Management)

Academic

Subject	Credit
Art Appreciation 5410	2
Freshman English 2111-12	3-3
Freshman Mathematics 2611-12	3-3
Health and Physical Education 5511	2
Orientation 5100	0-0
Chief British Writers 2127	3
Introduction to Sociology 2321	3
Chemistry 2511-12	3-3
World History 2811-12	3-3
Federal Government 2835	2
General Psychology 5121	3
Psychology for Business and Industry 4032	3
	<hr/> 42

Business

Economics 2833-34	2-2
Introduction to Accounting 4422	3
Principles of Marketing 4436	3
Business Law 4445	3
*Principles of Advertising 4933	3
*Business Law 4446	3
*Principles of Accounting 4431	3
	<hr/> 22

Technical

Typography 4911-12	2-2
Platen Presswork 4913-14	2-2
Printing Industry and Processes 4915	3
Introduction to History of Printing 4916	3
Mechanical Drawing 4011-12	3-3

*Electives

Subject	Credit
Cylinder Presswork 4920-23	2-2
Machine Composition 4922-25	2-2
Layout, Design and Planning 4924	3
Newspaper and Book Makeup 4926	2
Advanced Composition 2132	3
Bindery Processes and Techniques 4931	2
Offset Presswork 4932	2
Production Problems and Practices 4934-35	2-2
4944-45	2-2
Proofreading and Copy Preparation 4937	3
Printing Estimating 4941	3
Printing Management 4942	3
*Advanced Typography 4930	3
*Advanced Machine Composition 4936	3
*Advanced Printing Estimating 4943	3
	<hr/> 66

Industrial Training

Two-year Curriculum In Trade Sequence

Printing Option

Subject	(Clock Hours Per Week)
Communications 2111-12	3-3
Mathematics 2611-12	3-3
4021	3
World History 2811	3
Hygiene 5511	2

Business

Economics 2833	2
Elementary Bookkeeping 4222	3

Technical

Industrial Processes 6213	3
Metals Fabrication 4712	7
Drawing and Blueprint Reading 4011-12	6-6
Shop Electives	9-9-9-9

Subject (Clock Hours Per Week)

Related Technical Information	3-3-3-3
Industrial Relations 4022	3
Technical Problems 4002	6
Technical Sketching 4321	7

Florida A & M University--Semester System

Industrial Arts Plan I--Teacher Training

(Printing-Option)

Academic

Subject	Credit
English 101-2, 204	9
Mathematics 103-4	6
Psychology 100, 210-20	9
Physical Education 100 and Activity Electives	4
U. S. History 103-4	6
Physics 201-2	8
Education 201, 307-8	9
and Measurement and Evaluation	3
Military Science 101-2, 201-2	4
	<hr/> 58

Business

Economics 203-4	6
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Technical

*Technical Sub Areas	33
Industrial Arts Professional	
Principles of Vocational Education 430	
Internship Teaching 401	
General Shop 320	
Organization of Materials 410	
Teaching Aids 411	
Methods 414	
Seminar	
	<hr/> 22
	55

Electives

(Unclassified)	9
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*See Vocational and Technical listings.

Industrial Arts Plan II--Teacher Training
(Trade and Industrial Education--Printing Option)

Academic

Subject	Credit
English 101-2, 204	9
Mathematics 103-4	6
Psychology 100, 210-20	9
Physical Education 100 and Activity Electives	4
U. S. History 103-4	6
Physics 201-2	8
Education 201, 307-8 and Measurement and Evaluation	9
Military Science 101-2, 201-2	3
	<u>4</u>
	58

Business

Economics 203-4	6
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Technical

*Technical or Vocational Specialty	39
Trades and Industrial Professional	
Teaching Aids 411	
Internship Teaching 412	
Seminar 415	
Methods 420	
Management and Safety 421	
Principles of Vocational Education	
	<u>22</u>
	61

Electives

(Unclassified)	15
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*See Vocational and Technical listings.

*Two and Three-year Vocational Technical
(Printing Technology and Management)

Academic

Subject	Credit
English 101-2	6
Mathematics 103-4	6
Military Science 101-2, 201-2	4
Chemistry 101-2	8
Psychology 100	3
Physical Education 100 and Activity	2
Art Appreciation 200	3
U. S. History 100	3
	<hr/> 35

Business

Business Organization and Management 303	3
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Technical

Basic Graphics 101	2
Employer-Employee Relations 250	3
Machine Composition 131, 241	6
Typography 111	3
Materials and Processes 112	3
Presswork 121	3
Layout and Design 122	3
Technical Drawing 102	2
Advanced Presswork 132	3
Color 113	2
Printing Production Management 243	3
Estimating 133	3
Offset Lithography 244-61	6
Industrial Internship 250	6
Technical Seminar 260	3
Offset Presswork 260	3
Advertising Production 271	2
Book Design 272	2
	<hr/> 58

*Curriculum supports four year programs.

Lincoln University--Semester System

(Graphic Arts--Teaching Option)

Academic

Subject	Credit
English 101-2	3-3
200-1	3-3
Mathematics 111-14	3-3
Physical Education 101-2	1-1
203-4	1-1
Hygiene 101-10	1-1
General Psychology 201R	3
Military Science 101-2	1-1
201-2	1-1
Survey Social Science 100A-100B	2-2
Applied Physics 105-6	3-3
202 or Educational Psychology 204	3
History 205-6 or Government 203-4	3-3
*English 355-56-58	<u>3-3-3</u>
	59

Business

*Business Law 411	3
*Elements of Economics 307	<u>3</u>
	6

Technical

Commercial Art 207	3
Drawing 105	3
Linotype 309-10	<u>4-4</u>
Elements of Composition and Presswork 105-6	<u>4-4</u>
Mechanism and Laboratory Maintenance 302	3
Estimating 409	3
Bookbinding 308	3
Shop Management 410	3
Vocational Printing 405-6	<u>4-4</u>

*Approved Electives

Subject	Credit
*Principles of Photography 230	3
*Photoengraving 332	3
*Offset Principles and Practice 335	3
*Industrial Relations 441	3
	<hr/> 9

Electives

(Unclassified) 9

*Approved Electives.

Mississippi Vocational College--Quarter System

(Technical Education)

Academic

Subject	Credit
English 101-2-3, 201-2-3	3-3-3-3-3-3
204-5-6	2-2-2
Industrial Mathematics 101-2-3	3-3-3
Social Science 101-2-3	3-3-3
Orientation 100	0
Physical Education 101-2-3	1-1-1
201-2-3	1-1-1
Biological Science 101-2-3	3-3-3
Physical Science 201-2-3	3-3-3
Government 201-2	3-3
Sociology 212	3
Applied Science 302-3	3-3
Industrial Hygiene 320	3
	<hr/> 34

Business

Typing 211	3
Bookkeeping 101-2-3	3-3-3
Economics 211-12	3-3
Business Law 371-72	3-3
Business Management 421	3
Labor Problems 443	3
Salesmanship and Advertisement 472	3
	<hr/> 33

Technical

Hand Composition 101-2-3	2-2-2
Platen Presswork 104-5	2-2
Mechanical Drawing 112	2
Methods and Materials 122	3
Types and Styles 123	3
Industrial Apprentice Practice 151-52-53	1-1-1
254-55-56	1-1-1
Commercial Art 301-2	3-3
Display Composition 225	3
Imposition and Lockup 226	3
Machine Composition 241-42-43	2-2-2
344-45-46	2-2-2

Subject	Credit
Design and Layout 224	3
Automatic Platen Presswork 206-7	2-2
Automatic Presswork 208 (Offset)	2
Journalism 301-2-3	3-3-3
Proofreading 327	3
Estimating 328-439	3-3
Automatic Cylinder Presswork 309-10	2-2
411-12	2-2
Mechanics of the Newspaper	3
Seminar (Senior Project) 450	3
Industrial Internship 200-300-460	<u>10-10-10</u>
	119

Vocational-Technical Training--Two-year

Subject	Allotted Time Hours
Unit I: Composition, Type Spaces, Leads, Setting Plain Matter, Taking a Proof, Correcting and Returning Type to Case, and Type Calculation	260
Unit II: Proofreading, Type Faces and Cutting Tools	260
Unit III: Job Composition and Composing Machines	260
Unit IV: Paper, Setting a Job, Tables and other Intricate Matters	260
Unit V: Locking-up Forms, Imposition and Presswork	260
Unit VI: Advanced Presswork and Printing Ink	260
Section I: Related Academic Subjects	260
Section II: Related Academic Subjects	<u>260</u>
	2080

Prairie View A & M College--Semester System

Printing Option

(Industrial Education--Plan I)

Academic

Subject	Credit
Mathematics 113, 123	3-3
English 113, 123, 213, 223	3-3-3-3
Orientation 111, 1212	1-1
Chemistry 114, 124	4-4
Physics 215, 225	4-4
History 173, 183	3-3
Government 113, 123-24	3-3-3
Psychology 383	3
Military Science 111, 121, 211, 221	1-1-1-1
Physical Education 111, 121, 211, 221	1-1-1-1
	<u>62</u>

Business

Economics 343	3
Accounting 253, 263	3-3
Business Law 373	3
Personnel Management 342-43	3-3
Labor Problems 453	3
Typing 132, 142	2-2
	<u>25</u>

Technical

Drafting 113, 123	3-3
Typography 112, 124, 234	2-4-4
Platen Presswork 152, 172	2-2
Graphic Arts Survey 113	3
Cylinder Presswork 162-63	2-2
252-53, 262-63	2-2-2-2
Machine Composition 182, 272-73	2-2-2
282-83	3-4
Bindery Operations 211	1
Estimating 212	2
Plant Management 243	3
Printing Production 292, 294	2-2
	<u>58</u>

Printing Option
(Industrial Education--Plan II)*

<u>Academic</u>	
Subject	Credit
Mathematics	6
Chemistry	9
Physics	10
History	6
Social Science	3
English	<u>12</u>
	46
 <u>Technical</u>	
Industrial Education	26
 <u>Electives</u>	
(Unclassified--Minor)	18

*This curriculum is designed for students who desire a Bachelor of Science degree with a major in Vocational-Industrial Education after having completed three years as a journeyman printer.

Industrial Arts Plan I--Teacher Training

Academic

Subject	Credit
Mathematics 113, 123	3-3
English 113, 123; 213, 223	3-3-3-3
Orientation 111, 121	1-1
Military Science 111, 121; 211, 221	1-1-1-1
Physical Education 111, 121; 211, 221	1-1-1-1
Physics 214, 124	4-4
Chemistry 114, 124	4-4
Education 311, 334; 433	3-3-3
History 114, 124	<u>3-3</u>
	59

Technical

Drafting 113, 123	3-3
Industrial Arts 273, 323; 413, 406	3-3-3-6
Industrial Lab	<u>6-6-5-5</u>
	43

Electives

(Unclassified)*	6
(Unclassified-Minor)	<u>18</u>
	24

*Students must elect three hours from the following: Sociology 103; Economics 203; or Home Economics 123.

Industrial Arts Plan II--Teacher Training**

Academic

Subject	Credit
Mathematics 113, 123	3-3
English 113, 123; 213, 223	3-3-3-3
Orientation 111, 121	1-1
Military Science 111, 121; 211, 221	1-1-1-1
Physical Education 111, 121; 211, 221	1-1-1-1
Physics 214, 224	4-4
Chemistry 114, 124	4-4
Education 311, 334; 483	3-3-3
History 114, 124	<u>3-3</u>
	59

Technical

Drafting 113, 123	3-3
Industrial Arts 273, 323; 413, 406	3-3-3-6
Industrial Lab	<u>6-6-9-9-9</u>
	60

Electives

(Unclassified)*	6
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*Students must elect three hours from the following: Sociology 103; Economics 203; or Home Economics 123.

**This plan does not offer a minor.

Vocational Technical Education--Printing Option

(One and Two-year Curriculum)

Academic

Subject	Credit
English 133*, 143	3-3
Sociology 263	3
Applied Science 133*, 143*, 213	3-3-3
Orientation 111, 121	1-1
Military Science 111, 121; 211, 221	1-1-1-1
Physical Education 111, 121; 211, 221	1-1-1-1
	<u>28</u>

Technical**

Typography 112, 121, 124, 222	2-2-4-2
Platen Presswork 152, 162, 172	2-2-2
Graphic Arts Survey 113	3
Layout, Design & Lettering 133	3
Machine Composition 182, 273, 283	3-3-3
Cylinder Presswork 262	2
Estimating 212	2
Plant Management 243	3
Printing Production 294	4
	<u>42</u>

Electives

(Unclassified)	2
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*Students who plan to continue in the four-year program should enroll in Mathematics 113, 123 and English 113, 123.

**Courses support the Industrial Arts plans.

Southern University--Semester System

(Technical Education)

Academic

Subject	Credit
English 111, 122, 231	2-3-3
Biology 111, 122 or Chemistry 131, 142	4-4
Physical Education 110, 111	2-2
Mathematics 122, 133	3-3
Military Science 111, 122, 231, 242	2-2-2-2
Orientation 111, 122	1-1
Trigonometry 242	3
Physics 211	4
Human Relations 422	2
World Literature 210	3
	<hr/> 48

Business

Commerce	3-3-3-3
Economics	3
	<hr/> 15

Technical

Art	2-3-3
Typography 111, 122	2-3
Press Work (Letterpress) 112, 232	3-3
Linotype Keyboard Operation 212, 221	3-3
Presswork 253	3
Graphic Arts Materials and Processes 235	3
Printing Production 322, 323, 421	4-4-4
Photo Engraving 241	3
Offset Lithography	4
Engineer Drawing 111	3
Offset Camera and Plate Making 251	3
Journalism 341	3
Estimating Cost Analysis 412	3
Management of Printing Production 416	3
	<hr/> 65

Texas Southern University--Semester System

(Industrial Education--Printing Option)

Academic

Subject	Credit
English 131-32	3-3
231-32	3-3
Mathematics 133-34	3-3
Physical Education 111-12	1-1
211-12	1-1
Education 131	3
*331	3
Health Education 221-22	2-2
Chemistry 131-32	3-3
*Psychology 131, 334	3-3
Physics 131-32 or Biology 131-32	3-3
Government 370-71	3-3
History 370-71	3-3
	<u>3-3</u>
	65

Technical

Drafting 121, 132	2-3
*205	2
Carpentry 141-42	4-4
251-52, 351	5-5-5
*221	2
Industrial Education 231, 331	3-3
334, 432	3-3
*332, 434, 464	3-3-6
Electives	<u>3-6-3</u>
	68

Printing Option Courses

Essentials of Printing 141-42	4-4
Special Printing Projects 251-52	5-5

*Students who do not plan to teach may take electives instead.

Subject	Credit
The Printing Industry 321	2
Applied Printing 322	2
Advanced Printing 351-52	<u>5-5</u>
	32

West Virginia State College--Semester System

(Technical Science--Printing)

Academic

Subject	Credit
English 101-2	6
200-2	6
Mathematics 101-2	6
206-7-8	12
Occupational Orientation 100A-100B	2
Social Science 100	3
Physical Education 101-2	2
201-2	2
Military Science 101-2	2
201-2	4
301-2 or Electives	6
401-2 or Arts Survey 201-2	6
Health Education 102	1
Physics 201-3, 202-4	5-5
	<hr/> 68

Business

Business Administration 215-16	8
307-10	6
Economics 201-2	6
	<hr/> 20

Technical

Mechanical Drawing 101-2	6
Typography and Proofreading 171	3
The Platen Press 172	3
The Cylinder Press 273	3
Make-up and Imposition 274	3
Cutting, Folding and Bookbinding 370, 470	6
Photo Procedures 371-72	6
Copy Editing 373	3
Linotype Operation 375-76	6
Typographical Format 477	3
Cost Finding and Estimating 478	3
	<hr/> 45

Industrial Arts Education--Printing Option

Academic

Subject	Credit
English 101-2	3-3
201, 302	3-3
Social Science 100-2-3	1-3-3
201-2	3-3
Occupational Orientation 100A	1
Occupational Analysis 100B	1
Mathematics 101-2	3-3
Physical Education 101-2	1-1
201-2	1-1
Military Science 101-2	1-1
201-2	2-2
301-2 or Arts Survey 201-2	3-3
401-2 or Electives	3-3
Physical Science Survey 101-2	3-3
Music 107	2
Education 201-2	3-3
307-8-16	3-3-3
462E-462S	3-3
Art 202	2
Physics 201-3, 202-4	5-5
	<hr/> 96

Technical

Mechanical Drawing 101-2	3-3
Machine Tool and Sheet Metal 243	3
Woodwork 211-12	3-3
General Shop 300	3
Shop Concentration	3-3-3-3
	<hr/> 30

Two-year Curriculum--Printing Option

(Terminal Technical Program)

Academic

Subject	Credit
English 101-2, 202	3-3-3
Mathematics 101-2	3-3
Occupational Analysis 100A-100B	1-1
Military Science 101-2	1-1
201-2	2-2
Health Education 101	1
Physical Education 101-2	1-1
201-2	1-1
	<u>28</u>

Business

Business Law 307	3
Business Administration 215, 407	<u>3-3</u>
	9

Technical

Drawing 101-2	3-3
Technical Electives	<u>6-6-5-6</u>
	29

Veterans and Civilians Intensive Vocational

Course--Printing Option

Course	Length Course*	Hours Daily
Printing--Hand and Ma- chine Composition	22½ months	7
Photo-Engraving	11½ months	7

*A month is equal to four weeks.