

The Student And Two-Year Technical Programs

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The two-year technical college program is well established and it has an exciting future. It should not be considered as competition, but rather as a companion to four-year baccalaureate degree programs.

In a June 1968 summary on two-year technical programs in Agriculture and the Natural Resources prepared by Dr. Fred W. Manley, Educational Consultant for the North Carolina Department of Community Colleges, 36 states reported a total of 181 institutions offering 462 programs with approximately 13,665 students enrolled (1).

Alfred Agricultural and Technical College has five major divisions of study, including Agriculture Technology, Business Technology, Engineering Technology, General Studies and Health Technology. There are approximately 1800 students and 130 teaching faculty members.

A closer look at the Agriculture Division reveals as of September 1966:

	Students	Faculty
Ag. Dept.	240	12
Ag. Eng.	67	4
Horticulture	81	4
Total	388	20

Table 1 shows the curriculums offered in the Agriculture Department at Alfred. These cover a wide area of training for the student and service to the state and nation:

TABLE 1. Curricula offerings in Agriculture Department Alfred, New York, Fall 1966.

Number of Students	Curriculum
36	Agricultural Business
38	Agronomy and Soil Conservation
69	Animal Husbandry
39	General Agriculture
39	Agricultural Science
19	Food Distribution
240	

The Agriculture Department, within the Division of Agriculture, operates a general farm with poultry, sheep, swine, beef and dairy enterprises that are manned by full time paid employees. This farm is used extensively as a laboratory for student training.

The objectives of the Agriculture Department will best convey what we are attempting to do in a two-year technical program:

1. Enable students to have a choice of many courses of study in the agriculture and biological science related fields.
2. Train students for technical competency in agriculture-industry needs.
3. Foster unimpeded growth in academics.
4. Offer basic science programs of excellence — recognized by other institutions as such — thereby enabling students to transfer readily and continue their formal education if they wish.

Admission requirements at the two-year technical colleges vary and the following examples give some indication of the variations.

Thompson School of Applied Science in New Hampshire in their College Bulletin for 1967-68 states, "Appli-

cants who are not high school graduates must be 18 years of age, have a minimum of two years of high school or its equivalent and be able to demonstrate through aptitude tests their ability to handle course work satisfactorily (2)."

The 1966-68 bulletin from the Agricultural & Technical College at Alfred states that, "The number of applicants always exceeds the number admitted." All applicants for a degree program must meet the following requirements:

1. Must have graduated from an approved secondary school and should have ranked in the upper half of the graduating class.
2. Must have earned satisfactory scores on the State University sponsored admissions examination.
3. Must meet the requirements of the individual curriculums as listed in Table 2.

TABLE 2. Requirements for entrance in specific curricula

Curriculum	High School Subjects		Other Desirable Qualifications
	Required	Recommended	
Agricultural Business	No specific requirements	Voc. Agri. Mathematics Science Incl. Chemistry	Farm Background Farm Background Farm Background Retail Food Store Experience
Animal Husbandry			
Food Distribution			

A farm background is desirable for students in the agriculture department. Entering freshmen are required to take a farm practice test. Based on these results, some students are required to go on a work-study plan that will provide farm work experience (3).

Who Are These Students?

Technical program students come from large cities, towns, crossroads and farms. Some are seeking a small college rather than a large university; some come to a two-year program because that is all they want or need. Others would like to go elsewhere but admission requirements will not permit them to enter. Most students in agriculture would not be acceptable to four-year colleges in New York State. Only 10-12% have records that would enable them to get into a reasonably select liberal arts college. This really may be a blessing in disguise because they probably would not be able to compete in a larger college, but in closer contact with faculty and with less severe competition they pass that first rough academic shock and become creditable students. The late bloomer has a chance! A statement from an unpublished paper by Dr. Jerome K. Pasto of Pennsylvania State University puts it very well.

"Two-year students have the same measure of interests and motivation as four-year students in pursuing their educational objectives. They possess the same personal qualities which employers want, such as ambition, sense of responsibility, and the ability to motivate and get along with people." (4)

Can These Students Transfer To Four-Year Programs After Completion of A Technical Program?

At this point I would like to make clear that our primary objective in the technical program is, and should be, terminal education — but we will not close our minds to the desire of certain students to continue their education

beyond the technical program. This amounts to as high as 50% in some schools.

The following quotation is from Dr. L. W. Feddema, Office of Resident Instruction, Cornell University:

"It is interesting to note that as a group their (transfer students) performance at Cornell is the same as students who complete four years in residence in the University. The chief difference is that transfers are admitted based upon outstanding academic performance in a two-year Agricultural and Technical College, while the regular student is judged on secondary school ability. As a consequence, the transfer whose secondary school record may be inferior, is older, highly motivated, experienced in study and does not hesitate to seek advice or assistance. Thus, he performs equally in the College of Agriculture (at Cornell) because experience and hard work help overcome poor performance records in secondary school." (6)

Figure 1, a summary of Cornell student records for 1962-65, shows a comparison of the grade averages of transfer students and Cornell students.

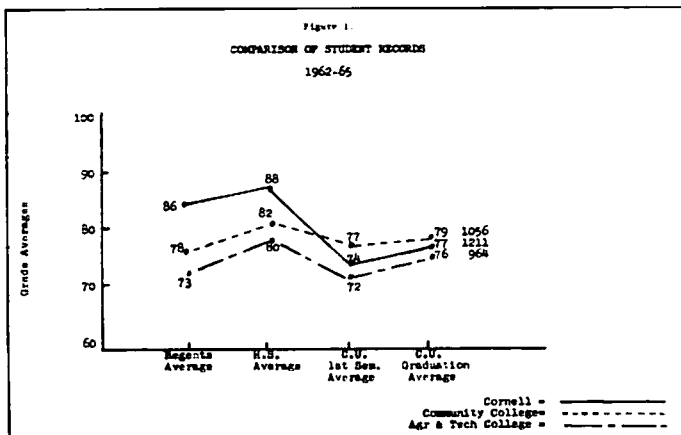


TABLE 4. 1967 Alfred agriculture department graduates continuing education at 4-year colleges and universities.

Institution	No. Students
Brockport State College	2
Cornell University	7
Geneseo State College	2
Kansas State University	1

North Carolina State University	1
Ohio State University	2
South Dakota State University	1

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Where Do They Find Jobs?

The summary of placement statistics for two graduating classes at Alfred Agricultural and Technical College as given in Table 5 tells the job story quite well.

Placement opportunities are many and varied but include jobs as farm operators, farm managers, artificial insemination technicians, dairy and livestock herdsman, feed sales and service representatives, livestock buyers, meat and poultry plant inspectors, agriculture research technicians, lab technicians with food processing and pharmaceutical companies. The following unsolicited quote is from a letter written by W. E. Jennings, DVM, as Director of the New York State Division of Meat Inspection, "We are very happy with the graduates of your college who have joined the Division of Meat Inspection. They are doing a splendid job for us." (7)

Employers are well satisfied with two-year program graduates and the jobs outnumber the students at about a 5:1 ratio and the salary scale is good. Few, if any of our graduates, went to work for less than the equivalent of \$5,000 as a starting salary and at least one had an offer in the \$8,000 range this past year.

TABLE 5. SUMMARY OF PLACEMENT STATISTICS Alfred Agricultural & Technical College (5)

	1966	1967
Number of students fulfilling graduation requirements in June (does not include December and March graduates).	53	49
Number of students interviewed as to post-graduate plans.	47	49
Graduates returning to home farm	21%	25%
Graduates accepting positions on farms as herdsman, managers, related positions	6%	13%
Graduates entering agricultural business fields such as fertilizer salesmen, crop inspection, lab quality work, etc.	15%	19%
Graduates entering four-year colleges	41%	35%
Graduates entering the Peace Corps	2%	2%
Graduates uncommitted or undecided	15%	6%

Agriculture Division graduates in all six of the Agricultural and Technical Colleges in New York State for the year 1965 numbered 511. Their vocational distribution is given in Table 6.

Field of Study (Curriculum or Specialization)	Total Number	OCCUPATIONAL STATUS							
		Employed		Continuing Education		Military Service		Unknown	
		Number	Percent	Number	Percent	Number	Percent	Number	Percent
Agricultural Programs:									
Agricultural Business	25	16	64.0%	6	24.0%	1	4.0%	2	8.0%
Agricultural Engineering	51	33	64.7%	9	17.7%	2	3.9%	7	13.7%
Agricultural Science	7	2	28.6%	4	57.2%	-	-	1	14.2%
Agronomy	41	12	29.2%	27	65.9%	-	-	2	4.9%
Animal Husbandry (Including Animal Science and Poultry Science)	134	48	35.8%	72	53.7%	4	3.0%	10	7.5%
General Agriculture	28	11	39.3%	11	39.3%	2	7.1%	4	4.3%
TOTAL	286	122	42.7%	129	45.1%	9	3.2%	26	9.0%
Other Programs:									
Animal Science (Delhi)	28	12	42.9%	11	39.2%	1	3.6%	4	14.3%
Biological Technology (Farmingdale)	30	7	23.3%	22	73.3%	-	-	1	3.4%
Dairy & Food Technology	50	23	46.0%	18	36.0%	5	10.0%	4	8.0%
Food Processing (Morrisville)	29	7	24.1%	19	65.6%	1	3.4%	2	6.9%
Ornamental Horticulture	88	44	50.0%	42	47.8%	1	1.1%	1	1.1%
TOTAL	225	93	41.3%	112	49.8%	8	3.6%	12	5.3%
GRAND TOTAL	511	215	42.0%	241	47.2%	17	3.3%	38	7.5%

REFERENCES CITED

1. Manley, Fred William. A Study Summary. Commission on Education in Agriculture and Natural Resources, National Research Council. June, 1968.
2. Thompson School of Applied Science. Bulletin of the University of New Hampshire Issue 1966-67, 1967-68.
3. Agricultural and Technical College at Alfred Bulletin 1966-68. State University of New York.
4. Pasto, Jerome K. Two-Year Technical Education Programs in Agriculture and Natural Resources.
5. Wietgreffe, W. H. 1967 Placement and Job Opportunities, Agriculture Department. State University of New York, Agricultural and Technical College, Alfred, New York.
6. Feddema, L. W. Academic Performance of Transfer Students From State University of New York Agricultural and Technical Colleges From 1950-1965. A Report to the President's Committee To Study The College of Agriculture. Cornell University.
7. Jennings, Wm. E. Personal correspondence to Professor Charles W. Cameron. March 21, 1967.

The minimum number of semester hours of agriculture scheduled for the freshman year was 5, the maximum 18, and the average 10.8.

The minimum number of semester hours of agriculture scheduled for the sophomore year was 3, the maximum 24, and the average 10.7.

There were ten out of thirty-one (or 32.25 per cent) of the reporting institutions that had integrated certain freshman and sophomore classes during the last five years. Nineteen (or 61.3 per cent) of the institutions reporting had integrated no freshman and sophomore classes.

Twenty-two (or 71 per cent) of the institutions reporting have not dropped any freshman or sophomore courses from the catalog during the last five years.

Twenty-five (or 80.6 per cent) of the institutions reporting have not added any freshman or sophomore courses during the last five years. One institution reported a few courses had been added but did not give the number. One institution reported that committees were working on plans to integrate introductory courses in animal husbandry, dairy husbandry and poultry. There were a total of thirty-six courses dropped and sixteen courses added during the last five years in the institutions surveyed. Thirty-three of the courses dropped from the agriculture curricula totaled eighty-three semester hours. Twelve of the courses added to the agriculture curricula total forty semester hours.

Table No. 1 gives the number of semester hours of agriculture required for students majoring in the various agriculture curricula and the number of institutions reporting in each category.

Table 1. Agricultural requirements for various agricultural curricula.

Agricultural Curricula	Requirements in Semester Hours				
	24-28	29-34	34-43	44-48	over 48
General Agriculture	3	8	6	4	7
Agronomy		3	4	2	5
Animal Industry		4	4	3	5
Agricultural Business	1	6	4	4	3
Agricultural Economics	1	3	2	3	1
Agricultural Engineering			3	2	1
Dairying		1	2	4	3
Forestry				2	1
Horticulture	1	1	2	2	5
Agricultural Education			2	2	5
Agricultural Education (Non-vocational)		1			
Agricultural Inspection		1			
Enology					
Entomology		1			
Food Technology		2			
Plant and Soil Science			1		
Plant Pathology		1			
Poultry Science			1		1
Pre-Forestry					1
Range Management			1		
Viticulture					1

The total number of institutions in the various categories would not necessarily be the total number of institutions sampled because of the variations in the number of fields of agriculture at the different institutions.

There was a wide variation in the number of semester hours of agriculture required of those students majoring in different specific fields at a given institution as well as from one agricultural curriculum to another at different institutions.

Table No. 2 gives the number of semester hours of general and organic chemistry required in the various agricultural curricula and the number of institutions reporting in each category.

A Committee Survey On Improvement of Instruction

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Thirty-six questionnaires were sent to institutions that are members of the National Association of Colleges and Teachers of Agriculture. Thirty-two (or eighty-nine per cent) of these questionnaires were returned.

The purpose of this study was to inquire concerning the requirements of the various institutions that are members of NACTA in the following areas:

1. The number of semester hours required for a bachelor of science degree with a major in agriculture.
2. The number of semester hours of agriculture scheduled in the freshman and sophomore years.
3. The total number of hours of agriculture required in the various agricultural curricula.
4. The number of hours of chemistry, biology, and mathematics required in the various agricultural curricula.

The minimum number of semester hours required for a B.S. degree in agriculture was 124, the maximum 146, and the average 128.7.