I. Particle density
J. Aeration
K. Drainage
L. Surface area
M. Soil water

III. Chemical Properties — 8
A. Morphology of clay
B. Chemistry of clays
C. Ionic exchange
D. Acidity, alkalinity (pH) and salinity
E. Reactions in liming and acidification

IV. Biological Properties — 6
A. Soil organic matter
B. C:N
C. N transformation
D. Soil organisms
E. Sulfur transformation

V. Genesis and Classification — 5
A. Profile
B. Soil forming factors
C. Soil survey methods
D. Soil survey reports
E. Soil distribution
F. Classification systems (briefly with emphasis on nomenclature and soil orders)
1. Older classification systems
2. New classification systems

VI. Soil Fertility — 9
A. Nutrient availability
B. Macro and micro nutrients
C. Fertilizer sources, mfg. - availability
D. Application and placement
E. Fertilizer requirements

VII. Conservation and Management — 6
A. Drainage
B. Erosion mechanisms and control
C. Irrigation
D. Land use classification
E. Manuring - plant and animal

Total — 45

Laboratory Topics

Suggested minimum requirements - lab exercise or field trips for each major area in lecture. Include one (1) land use selection exercise.

Possible Lab Exercise	Possible Field Trip
Texture	Structure
Temperature	Color
Moisture	Origin, Classification
Ionic Exchange	Conservation and Management
Acidity, alkalinity - pH	
Soil O. M.	
N transformation	
S transformation	
Nutrient availability	

Progress and Status of Articulation Between Two- and Four-Year Institutions in California

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There is a very simple answer to the question: what is the progress and status of articulation between the two- and four-year institutions in the State of California? The answer is that both the progress and status are very good even though the educational system in California is huge and quite complex.

Let me briefly touch on the size and complexity of the educational system in general and that part of the system related more importantly to agricultural instruction.

The total number of institutions in California, by level of education, is as follows:

High schools	1,477
Community colleges	92
State colleges	19
University campuses	10
Private 4-year colleges	51

The number of educational institutions that award baccalaureate degrees is 80. There are, however, more than 170 institutions of higher learning located in the State of California.

The total number of institutions by category that offer some kind of agricultural instructional program is as follows:

High schools	277
Community colleges	36
State colleges	4
University of California	3

Within each of the seven regions of California there are several high schools and community colleges that offer agricultural programs. They are, by regions, as follows:

	Institutions with Agriculture Programs	
Region	High Schools	Community Colleges
North Coast	24	6
South Coast	31	1
Superior (north)	42	6
Central	43	4
San Joaquin Valley	45	5
Southern	39	6
Southwestern	53	8
	277	36

You will agree that effective articulation between and among institutions in such great numbers is somewhat of a challenge. Yet, my predecessor at Fresno State College, Lloyd Dowler, past president of NACTA, and his colleagues in the state college and university system have developed very close relationships which have facilitated articulation.

Since about 80 per cent of the approximately 600 undergraduate students in agriculture at Fresno State College are transfers from community colleges, it is essential that very close relationships prevail and, moreover, that such relationships continue to be cultivated and strengthened.

Effective articulation is accomplished by personal visitation to the community colleges. Ofttimes the agriculture faculty of the community colleges visit with us in the School of Agricultural Sciences at Fresno State College. In addition, they frequently bring interested students with them. Through prior communications, personal interviews are arranged with specific faculty members who represent areas of the prospective students' interests.

During such visitations the faculty members of our respective institutions compare notes about the material covered in matching courses. In addition, the complete listing of courses offered at our respective institutions is reviewed and articulation agreements are formulated.

In fact, teachers of agriculture in high schools, community colleges and state colleges have held meetings to study how effective transition may be effected for students going from high schools to community colleges to state colleges.

The liaison or articulation between and among institutions has been aided considerably by and through the Articulation Conference in California. The Articulation Conference is the name given to the semi-annual meetings of those standing committees of the California Association of Secondary School Administrators, the California Junior College Association, the California State Colleges, and the University of California appointed to confer with one another for the continuing improvement of articulation among the segments of public education and for the achievement of fuller mutual understandings. The State Department of Education is a participating agent.

The names of the committees making up the Articulation Conference are: The Affiliations Committee (high schools), the Junior College Committee on Relations with Other Schools, the State College Committee on Coordination (state colleges), and the University's Committee on Affiliations with Secondary Schools, Junior College Conference Committee, and Committee on Coordination with State Colleges.

Although the Articulation Conference has existed as a quadripartite conference since 1944, two of its constituent committees have been functioning for many years more: the High School-University Committee on Affiliations since 1919 (except 1927-30) and the Junior College-University Conference

Committee since 1932.

The Liaison Committee on Agriculture and Natural Resources (until the spring of 1970 this was known as the Liaison Committee on Agriculture) is one of several sub-committees of the Articulation Conference. In addition to the Liaison Committee on Agriculture and Natural Resources there are also liaison committees for ....

Business Administration, Northern Section
Business Administration, Southern Section
Creative Arts
Engineering
English Foreign Language
Foreign Students
Letters and Science
Mathematics
Natural Sciences
Nursing Education
Ad Hoc Committee on Childhood Education

The Administrative Committee of the Articulation Conference is composed of representatives from high schools, community colleges, state colleges, universities, the Coordinating Council for Higher Education (a council established by the California State Legislature to coordinate the programs in the above institutions), a representative from the State Department of Education, and a consultant who is a representative of the California Community Colleges.

Although the membership of the Administrative Committee is different from that of the Articulation Conference, the chairman and secretary are common to both.

The Liaison Committee on Agriculture and Natural Resources is composed of representatives from community colleges, state colleges, the University of California, the State Department of Education, and the consultant of the California Community Colleges as well. This liaison committee meets at least once in the fall and once in the spring of each year.

Prior to 1960, the state colleges were not included officially in the Liaison Committee on Agriculture. The minutes of the February 20, 1960, meeting reveal the following interesting statement:

"Members present decided to request the Articulation Conference to make the Agricultural Liaison Committee a tri-partite committee with representation from the junior colleges, state colleges, and the University. The unofficial attendance of the state college representatives has been most valuable and the difficult times ahead make it imperative that these representatives have an official voice in the committee deliberations."

As you can imagine, the agenda of the liaison committee meetings covered problems and opportunities familiar to all of us. Curriculum patterns, articulation, quality and quantity of students, relevancy of programs, entrance requirements, limited admissions, the future of the Industry of Agriculture, and hundreds of other items were given considerable attention.

One of the most significant developments of the efforts of the Liaison Committee on Agriculture was the successful funding by the U. S. Office of Education of a quarter-of-a-million-dollar study of the agricultural occupations in California. By July or August 1970, there should be a report of this project. The occupational study was composed of interviews conducted in ten California counties. Questionnaires were mailed to every agribusiness firm in all ten counties that had more than fifty employees. There have been nearly 5,000 individual interviews and 1,700 firms have been covered.

The report should .....

1) identify and describe jobs, by level of education, available in California agribusiness;
2) determine the number of jobs in the state related to agriculture; and
3) present views of the leaders in the Industry of Agriculture.

The following paragraph appears in a progress report of the study:

"Contrary to some opinions, employee problems of health, absenteeism, accidents, and insurance were of relatively little concern. Even employee turnover seemed not important. The things that are worrying the growers and agribusiness leaders are all functions of education; time to train workers, lack of good trainers, the need to train and the lack of qualified workers were most important by far."

Another development which relates to the Liaison Committee on Agriculture and Natural Resources is a study of higher education in agriculture in California. The Coordinating Council for Higher Education (CCHE), through an advisory committee, engaged Dr. George A. Gries, Dean, College of Arts and Sciences, Oklahoma State University, as a consultant to study higher education in agriculture in California. Dr. Gries has visited many community colleges, state colleges and universities that offer agricultural programs. At least a preliminary report of this study will be made this fall.

In summary, the articulation between and among institutions that offer agricultural programs is continuing. Every effort is being made to cultivate even closer relationships than the fine relationships which prevail. As all of you are well aware, this is a human relations, public relations "kind of thing." It demands the best from all of us in order to present the highest quality educational opportunities to prepare young men and women for an ever greater and more dynamic and, yes, ever more challenging Industry of Agriculture.

Research and Action on Teaching Writing Skills

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One of the most frequently voiced complaints coming from employers about College of Agriculture graduates is related to their inability to communicate, with special reference to writing. Graduates from other colleges are also less than perfect in communication ability, but our concern is with our agricultural graduate.

As educators in the field of agriculture we, too, are desirous for our students to improve their abilities to communicate. We would like more accurate written answers to our examination questions. We would appreciate more clearly written term papers. We could evaluate content more accurately if words were not misspelled, if sentences were complete, if paragraphing were consistent and if the composition moved logically from one step to the next. Ability to express ideas clearly, accurately, and forcefully is important to a person's economic success, to his contribution to society, and to his own personal, intellectual development.

What do we mean when we use the term "communication"? Several answers can be given. In a broad sense it simply means to transmit information from one person or group to another, and to receive relevant answers. This involves many factors. The "information" may be transmitted through one or more of many senses: visual, auditory, tactile, gustatory, or olfactory; it may be accurate or inaccurate; it may be factual or fictional; it may express knowledge or emotions. Communication involves not only the specific ability of a person to express himself, but also requires an understanding by the originator about his audience, empathy. Frequently, employers or other critics mean any segment of the communication process. They may be complaining about attitude, personality, perceptivity, factual knowledge, or the mechanics of speaking and writing. Usually we educators have interpreted the criticism to be directed toward the ability to write (or speak) clearly, accurately, and without ambiguity.