

institutional activity because some students enter for specific training which may or may not call for the two-year degree. The practice of stop-in, stop-out, for whatever reason, is no more apparent than in the community colleges. Institutional-wide accreditation is provided by the Southern Association of Colleges and Schools and each college has acquired or is in the process of acquiring full accreditation, depending upon its stage of development. Significant problems confronting community colleges include role identification, curriculum articulation, governance, staffing and staff preparation, and, last but not least, adequate financial support.

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SCIENCE IN THE TENNESSEE COMMUNITY COLLEGES

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ABSTRACT

This study summarizes information related to the science course offerings of the Tennessee community colleges. Readers are urged to refer to Table 1 in F. C. Bell's article in this issue for 1972 enrollment data to aid in comparisons among the offerings of each community college.¹

INTRODUCTION

The first community college in Tennessee was opened in the fall of 1966 at Columbia. Since then, eight community colleges have opened in Tennessee and several others are planned.² Due in part to this rapid expansion,

¹ Bell has included 1973 state enrollment figures in his article in this issue. This reviewer discusses course offerings exclusively through 1972. Readers interested in 1973 curricula are referred to the Tennessee Higher Education Commission, Andrew Jackson Office Building, Room 908, Nashville, Tennessee, for current catalogues.

² Since the preparation of this manuscript, Chattanooga State Technical Institute has been incorporated into state community college system, bringing the total number of currently operable facilities to ten. It is to be noted that Chattanooga State Technical Community College, therefore, has not been included in this review.

data concerning the various science curricula and course offerings have not been readily available. Many courses have been adapted and implemented by the science divisions of the community colleges. A survey of the college bulletins has shown some variation in the offerings in the natural science and science related fields.

SCIENCE CURRICULA REVIEW

Biology

In the majority of Tennessee's community colleges, biological science courses constitute the bulk of the course offerings in the science curriculum. The number of courses available depends on three factors: the enrollment, or anticipated enrollment of the college; programs in the college requiring biology course training; and the size and expertise of the college faculty. Table 1 includes a summary of the number of quarter hours of biology courses currently being offered by the community colleges.

General Biology, (Human) Anatomy and Physiology, and Microbiology are the only biology courses offered by all nine community colleges; however, variations in content and format should be noted. Motlow State

TABLE 1: Number of quarter hours of biology offered by Tennessee community colleges

College	Biological Science	General Biology	Anatomy and Physiology	Micro and Bacteriology	Ecology	Genetics	Botany	Zoology	Others
Cleveland	3	3	3	2	1	0	0	0	0
Columbia	0	3	3	2	0	1	0	0	0
Dyersburg	0	3	2	2	0	0	3	3	0
Jackson	0	3	3	2	1	1	0	0	0
Motlow	3	3	2	1	1	1	0	0	1
Roane	0	3	3	2	0	1	2	2	0
Shelby	3	3	3	2	2*	1	1	2	1
Volunteer	3	3	3	2	1	1	0	1	1
Walters	0	3	3	2	0	1	2	2	2

*One of the ecology courses is for non-science majors.

Community College offers only one quarter of Microbiology. Motlow State and Dyersburg State Community Colleges give the complete Human Anatomy and Physiology course in two quarters. Jackson State has employed programmed instructional methods throughout the biology program. Columbia uses programmed material in the General Biology labs. Some colleges offer General Biology as separate quarters of Zoology and Botany, but, for the sake of continuity, these designa-

as a natural science elective rather than chemistry or physics is obvious when one compares the number and variation in course offerings of the divisions on the community college level. Nevertheless, all community colleges offer a year of General Chemistry and Organic Chemistry, and with singular exception (Motlow), all offer at least one quarter of Quantitative Analysis. Furthermore, Roane and Volunteer offer Qualitative Analysis to their students.

TABLE 2: Number of quarter hours of chemistry offered by Tennessee community colleges

College	Basic Chemistry	General Chemistry	Organic Chemistry	Qualitative Analysis	Quantitative Analysis	Others
Cleveland	3	3	3	0	1	1
Columbia	0	3	3	0	1	0
Dyersburg	3	3	3	0	1	0
Jackson	0	3	3	0	1	0
Motlow	0	3	3	0	1	0
Roane	0	3	3	0	0	0
Shelby	3	3	3	1	1	0
Volunteer	2	3	3	0	2	2
Walters	0	3	3	1	1	1
				0	2	0

tions are not used in this paper; rather, a general heading of General Biology is employed. On the other hand, other institutions offer General Biology in addition to specialized Botany and Zoology courses.

Four community colleges, Cleveland, Motlow, Shelby and Volunteer, have recognized the need for biology courses designed for non-science majors. The result has been to delete some or all of the quarters of Botany or Zoology—a trend which seems to be justified by the nature of the community college. Another trend is the appearance of environmental science courses—a trend which may continue.

Three community colleges have courses unique to that specific institution. Motlow State offers Parasitology, Volunteer offers courses in Spring Flora and Dendrology, and Shelby has a program in Human Ecology.

Chemistry

The tendency of non-science majors to choose biology

Cleveland, Dyersburg, Shelby and Volunteer offer a course in chemistry for non-science majors in addition to the general chemistry program. Three of these colleges have additional chemistry offerings. Cleveland State has developed a chemistry course for students with an inadequate background for college chemistry.³ Course work for non-science majors requiring a minimal amount of chemistry training for health-related programs is offered by Volunteer and Shelby. Only Shelby offers Biochemistry, and enrollment is restricted exclusively to science majors.

The greatest variation in the chemistry curriculum among Tennessee community colleges is as it relates to the lecture-laboratory format. The format in a Quantitative Analysis course can vary from three hours of lecture in conjunction with a three hour laboratory block

³The credit (five quarter hours) earned in this course is not transferrable as college credit.

weekly to two hours of lecture and six hours of laboratory weekly. Less variation in the lecture-lab schedule is evident in other chemistry courses with the exception of two community colleges which maintain three hours of lecture and a two hour lab block weekly throughout the chemistry curriculum. All General Chemistry offerings have otherwise three hours of lecture and three hour lab weekly. Organic Chemistry generally follows the three hour lecture-three hour lab system, with the exception of two institutions requiring a four hour lab in addition to three hours of lecture, and one institution requiring merely a two hour laboratory period.

Physics

The least amount of variation with respect to curricula offerings among community colleges is found in the Physics Division. With two exceptions, all colleges offer three physics courses to their students. The exceptions, Volunteer and Shelby, have classes in Aerospace (three quarter hours) and physics for health science major, respectively. Although not indicated in Table 3, Volunteer conducts a series of three courses, which are offered under general science, similar to the physical science programs for non-science majors at the other community colleges.

TABLE 3: Number of quarter hours of physical science offered by Tennessee community colleges

College	Physical Science	Applied or Introductory	General	Others
Cleveland	3	3	3	0
Columbia	3	3	3	0
Dyersburg	3	3	3	0
Jackson	3	3	3	0
Motlow	3	3	3	0
Roane	3	3	3	0
Shelby	0*	3	3	1
Volunteer	3	0	3	1
Walters	3	3	3	0

*Some physical science courses are listed in other areas.

All physics courses listing lecture and laboratory have three hours of lecture, although laboratory periods vary. One college has a physical science course without laboratory, three do not separate lecture and laboratory hours, and the remaining colleges include a two hour laboratory for non-majors courses.

TABLE 4: Total quarter hours of biology, chemistry and physics offered by Tennessee community colleges

College	Biology	Chemistry	Physics	Total
Cleveland	12	11	9	32
Columbia	9	7	9	25
Dyersburg	13	10	9	32
Jackson	10	7	9	26
Motlow	12	6	9	27
Roane	13	8	9	30
Shelby	18	13	7*	38
Volunteer	16	11	7	34
Walters	13	8	9	30

*This figure could be misleading as some physical science course offerings are listed in other areas.

One college has a one hour lab requirement with the applied (intermediate) physics class. Three have two hour labs and the remaining three required three hours of lab. General physics requirements vary in a similar manner. Table 4 summarizes course offerings in natural sciences currently available on the community college level in Tennessee.

Other Science Courses

Due to the community service emphasis of the community college, several programs have been developed in response to specific local needs, opportunities and potential. In some instances, such programs may have statewide application. Several colleges have offerings in medex, nursing, mental health, inhalation therapy, agriculture, engineering, electronics or pre-professional programs which require advanced training in math and science. Other colleges have initiated science related programs of study unique to that institution. For example, Volunteer has a program in Conservation and Environmental Technology leading to an Associate of Science Degree.

Shelby State is developing the most diversified program of science study. Shelby, a multiple campus facility, recorded a first year enrollment of slightly over 1000 students. It is expected to be the largest community college in Tennessee. Anticipating this development, and due to its ideal location in a large metropolitan area, the college has initiated a variety of unique programs. Earth science offerings are unequalled by other colleges in Tennessee. Offerings for non-science majors under general science are also numerous. In addition, Shelby supports an extensive allied health program that should be greatly aided by the proximity of the medical school. As well as its own specialized courses, the allied health programs will require a large number of supporting science courses.

CONCLUSION

The community college system is currently undergoing a developmental period in Tennessee. Increasing student enrollment and an indication of the need for continued development of specialized programs of study has prompted the planning of future colleges in our state as well as the expansion of present facilities. Complete uniformity in science curricula offerings may not be desirable, but knowledge of the state of the sciences in Tennessee's community colleges would be of value to those involved, on any level, with the community college program.

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