

A sepia-toned photograph of a landscape. In the foreground, there are rolling hills with sparse vegetation. In the background, a dense line of evergreen trees stretches across the horizon. The sky is bright and clear.

ACADEMIC PLAN
UNIVERSITY OF CALIFORNIA, SANTA CRUZ

1965-1975

SANTA CRUZ CAMPUS

ACADEMIC PLAN

1965 -- 1975

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The Regents on January 22, 1965 adopted a recommendation: "That the revised academic plan for the Santa Cruz campus, ... be approved in principle as a guide for the development of the campus, without commitment to specific proposals contained therein which require further review and approval, and with the exception that a total of 600, rather than 500 students, shall be accepted for the fall quarter, 1965."

ACADEMIC PLAN FOR THE SANTA CRUZ CAMPUS, 1965 - 1975

The Santa Cruz campus offers an opportunity almost unparalleled in this era to break new ground. Here and at Irvine the University of California will launch wholly new campuses for the first time in its history. At Santa Cruz the abundant space, great physical beauty in forest and sea, provide a setting well suited to educational innovation. Although insulated from unfavorable environment, the campus is within easy travel distance of urban centers and the busy life of metropolitan areas.

BACKGROUND AND GOALS

Introduction

The plan that follows sketches broad outlines, indicates general directions, states purposes and goals, and suggests some means of implementation. Because of the unusual nature of the academic program proposed and the need for experimentation with new methods and procedures, much latitude must be left to individual colleges and those who staff them.

This revision of the plan approved in principle by the Regents on November 16, 1962, results from two years of activity by the staff cadre assembled at Santa Cruz. As the implications of the originally stated goals have become more clear, it has been possible to state certain matters with greater precision. But the Santa Cruz plan will remain a loose-leaf document, subject to revision from time to time, as the Santa Cruz campus develops, as new needs emerge, and as improved methods of imparting instruction become available.

Genesis of the Santa Cruz Campus

The need for another multi-purpose campus in Northern California was first indicated publicly in the Additional Centers report of 1957. Projections of the State Department of Finance showed that without new campuses, the Berkeley campus might be called upon to instruct 27,400 students by 1965 and 35,200 by 1975. The "South Central Coast" Counties (San Mateo, Santa Clara, Santa Cruz, San Benito, and Monterey) were designated the appropriate region for a general campus. A new campus program was strongly recommended by the All-University Faculty Conference

of 1957. The Regents in October 1957 authorized three new campuses South Central Coast, Southeast Los Angeles-Orange, and San Diego; they called for further study of a campus in the San Joaquin Valley.

After a thorough site selection study, the Regents narrowed the choice for the South Central Coast to two possibilities: the Almaden Valley of Santa Clara County and the Cowell Ranch of Santa Cruz County. In March of 1961 the Cowell site was chosen; the following July Dean E. McHenry was appointed Chancellor and the campus received a general allocation of functions in the University-wide Academic Plan. In February 1962 a physical master planning design team, headed by John Carl Warnecke, architect, and Thomas D. Church, landscape architect, was chosen. The resulting Long Range Development Plan was accepted by The Regents in September, 1963. In July 1962 offices for the Chancellor and planning cadre were opened in Santa Cruz.

During 1961-62 substantial agreement was reached between University-wide and campus administrations on several major academic features including the following emphases: (1) the "college" as the basic unit of planning, and of student and faculty identification; (2) initial concentration on undergraduate liberal arts education; (3) the residential nature of the campus; (4) early distinction in the arts and sciences: humanities, social sciences and natural sciences; (5) a restricted curriculum, designed mainly to serve students' needs rather than reflect faculty interests; (6) stress on tutorials, seminars, and independent study; (7) a program of intramural sports.

During 1963-64 the Provost of Cowell College and the Business and Finance Officer were appointed, detailed curricular plans were proposed, and substantial progress was made toward assembling the initial faculty. By Mid-1964 construction was underway or about to begin on buildings sufficient for instruction of 500 students in 1965-66. In June 1964 The Regents amended their Standing Orders to establish the Graduate Division at Santa Cruz, with M.A., M.S., and Ph.D. degrees, and Cowell College, with B.A. and B.S. degrees.

Assumptions

Santa Cruz shares with all campuses of the University of California:

1. Quality standards for the faculty, summarized in tangible form in criteria for appointment and promotion.
2. Quality standards for students, expressed in requirements for admission at the various levels.
3. The obligation to teach, do research, and provide service.

4. The necessity of achieving, within the first decade, a student/faculty ratio of 16 to 1 and student/teaching staff ratio of 12 to 1.

In common with the other new general campuses at Irvine and San Diego, Santa Cruz will:

1. Make plans for ultimate accomodation of 27,500 students, undergraduate and graduate.
2. Provide instruction and research in the arts and sciences, engineering, business, basic medical sciences, and other fields in which demand warrants duplication on several campuses.
3. Choose instructional and research specialities in other fields that are particularly suited to the region in which the campus is located.

Further assumptions are derived from the special situation of the campus and the needs of the University as a whole:

1. Santa Cruz must provide, particularly in the early years, more than the usual amount of residential facilities. It should use the opportunity to develop new patterns of organization which effectively combine learning and living.
2. It would be helpful to the University if Santa Cruz could work out a pattern of organization and procedures that will foster a sense of belonging among students and, as President Kerr has put it, "make the campus seem small as it grows larger."
3. Santa Cruz should experiment with new methods of instruction, study, and communication, seeking to build a campus that will be up-to-date in the twenty-first century.

Preliminary planning at Santa Cruz has been carried out with the counsel of the Academic Advisory Committee, made up of faculty members of the Northern campuses, providing some of the functions that the Santa Cruz division of the Academic Senate will perform following its establishment during 1965-66.

Projected Enrollments

The number and characteristics of student population will depend on a number of factors, some of which cannot be definitely known for some time. Consequently two estimates are included: Table I is the high range; Table II the low range.

Table I is based on estimates of two term enrollments made by the Office of Analytical Studies in April, 1964. They correspond rather generally to the estimates made in the Growth Report, in the University-wide Academic Plan of 1961, and the Provisional Academic Plan for Santa Cruz of 1962. If funds do not become available for full year-round operation of the larger campuses, Santa Cruz will be called upon to carry a greater share. The following table shows the high range projections of student numbers and presumed characteristics for 1965 through 1975:

Table I

PROJECTED STUDENTS, BY NUMBERS, LEVELS AND FIELDS

1965-1975 (HIGH RANGE)

	<u>1965</u>	<u>1966</u>	<u>1967</u>	<u>1968</u>	<u>1969</u>	<u>1970</u>	<u>1971</u>	<u>1972</u>	<u>1973</u>	<u>1974</u>	<u>1975</u>
Total	500	1125	1900	2625	3450	4050	4475	4975	5450	6325	7200
By level:											
LD	200	500	1050	1350	1500	1675	1700	1725	1750	1925	2075
UD	290	600	800	1150	1700	2000	2275	2625	2950	3450	3975
GD	10	25	50	125	250	375	500	625	750	950	1150
By field:											
Arts-Sci.	500	1125	1775	2375	3110	3570	3865	4143	4371	5031	5711
Engineering			125	200	250	300	350	400	475	550	625
Natural Resources				50	90	130	170	200	225	250	275
Business						50	90	150	225	300	375
Basic Medical Sciences								32	64	64	64
Landscape Architecture								50	90	130	150

Table II utilizes the estimates of four term enrollments by the Office of Analytical Studies in June, 1964. They are based on the assumption that funds will be available to the University to operate the several campuses on a year-round basis thus necessitating a slower rate of growth on the Santa Cruz campus. The following table shows the low range projections of student numbers and characteristics for 1965 through 1975:

Table II

PROJECTED STUDENTS, BY NUMBERS, LEVELS, AND FIELDS

1965-1975 (LOW RANGE)

	<u>1965</u>	<u>1966</u>	<u>1967</u>	<u>1968</u>	<u>1969</u>	<u>1970</u>	<u>1971</u>	<u>1972</u>	<u>1973</u>	<u>1974</u>	<u>1975</u>
Total	500	1125	1625	2125	2700	2900	3250	3875	4525	5050	5350
By level:											
LD	200	500	900	1100	1175	1225	1275	1325	1400	1525	1600
UD	290	600	680	925	1325	1425	1650	2100	2500	2750	2900
GD	10	25	45	100	200	250	325	450	625	775	850
By Field:											
Arts-Sci.	500	1125	1525	1935	2465	2575	2805	3250	3695	4085	4230
Engineering			100	150	175	200	250	285	350	400	460
Natural Resources				40	60	85	125	150	175	190	200
Business						40	70	120	175	225	290
Basic Medical Sciences								30	60	60	60
Landscape Architecture								40	70	90	110

Undergraduate Goals

The following goals will be sought:

1. To establish an undergraduate liberal arts program on such a firm basis in the early years that it will not be adversely affected by the subsequent build-up of graduate work, or subordinated to the concurrent research and creative work of the faculty.
2. To produce undergraduates with the abilities, attitudes, and habits deemed central to a liberal education, including:
 - a. The ability to think in the different ways of the great areas of human knowledge and creative endeavor:
 - (1) the humanities and the arts
 - (2) the social sciences
 - (3) natural sciences and mathematics
 - b. Competence to speak, read, and write a foreign language.
 - c. Skill to write in English with clarity, precision, and a sense of style.
 - d. Ability to read easily and accurately and the urge to read widely.
 - e. Historical and philosophical perspective.

- f. Relative expertness in one area of study, as a field of concentration. .
3. To reach the student in depth by adding to the usual lectures and classwork such devices as:
 - a. Close instruction in seminars, tutorials, and independent study.
 - b. An intellectual atmosphere and residential setting.
 - c. Full-time commitment by the student to his University career.

The implementation of these goals will be an important responsibility of the colleges. Within specified campus-wide limits, each college will determine its own approaches to general education for its lower division students. Some colleges also may wish to provide some common course or other experience for their juniors and seniors. Fields of concentration will be defined and requirements set on a campus-wide basis, as will comprehensive examinations to test overall competence in the major.

UNDERGRADUATE TEACHING

Nature of the Colleges

A residential college is an educational unit of a university that combines, to a substantial extent, the functions of an academic unit of administration with co-curricular aspects of undergraduate student life -- living, dining, social, cultural, and athletic activities. These colleges will be the dominant academic units in the early development of the campus. They will be enduring and distinctive features of the ultimate campus organization.

The size of the colleges will average around 600, but will vary, probably from 350 to 1,000. To encourage interdisciplinary cooperation and to minimize particularism, there will be no formal departmental organization within the colleges. "Faculty fellows", the academic staff members attached to a particular college, will be joint appointees with the disciplinary group with which they are affiliated. All colleges will have some representation of the principal disciplines of the arts and sciences.

The college will be headed by the provost, a tenure member of the faculty. He and his family will "live in" the college compound, in quarters provided by the University. Apartments will also be available for 10 or more other fellows and preceptors who are

willing to participate in the life of the college most fully. Each college will perform most of the functions of the conventional College of Letters and Science, including the services of an academic dean's office, together with many of the functions usually performed by deans of students and student personnel offices. Functions performed for the colleges by the campus-wide administration will include admissions to the University, registration, student aid and scholarships, career counseling, and student health services.

Student life will be centered in the residential colleges to such an extent that there will be less than the usual level of campus-wide activity. There is no foreseeable requirement for a central, undergraduate student union; each college will provide student union facilities and services for its student members and faculty fellows.

All residential colleges will be involved in undergraduate liberal arts education. All colleges will have a student body chosen to provide a cross-section of background, ability, preparation, and interest. Because of their responsibility for the general education of their own members, all colleges will have faculty members from the principal fields of modern scholarship. Yet the colleges will differ importantly in shade and emphasis.

The proximity and shared interests of faculty and students within the colleges should make their atmosphere more intellectual and more adult than that of the usual residence hall. Rules governing student conduct will reflect this assumption. The curricular and co-curricular aspects of college life should combine to reach the "whole" individual and occupy the greater share of his attention, so that there will not be a chasm of separation in student minds between the world of learning and the world of leisure. Part-time jobs on the campus will be developed so that students needing supplemental income will not be forced to devote large segments of their time and energy to outside jobs unrelated to their interests or fields of study.

Ultimately, when the campus grows to 27,500, there might be 20 of these colleges, plus some professional schools that similarly combine the living-and-learning situation, but on the advanced or graduate level. At 27,500, Santa Cruz might achieve a "steady state" of 12,000 undergraduate members of colleges, 12,000 graduate students, and the balance other professional and special students.

After there are several colleges, students admitted to the University and the Santa Cruz campus will probably be allocated among them by a selection procedure involving a statement of preferences by the applicant, and the selection by a committee composed of representatives of the colleges.

Undergraduate classes will be scheduled in the physical facilities of the colleges whenever the offering is feasible. The goal will be for a typical student to be able to obtain about half of his courses taught by faculty fellows of his own college in premises provided by his own college. These will include most of his lower division and some of his upper division courses.

Upper division courses taught in one college will be open to students from other colleges. Courses requiring facilities not available in a college will be offered in specialized buildings in the campus core. Changes in college membership will not be prohibited, but there will be no necessity for a student who changes academic interests to change colleges.

In general, enrollments in courses will be made either small enough for "close" instruction in seminars or tutorials, or large enough to warrant special presentation by the best lecturers. We will try to provide every student in his initial year (whether freshman or transfer) with the experience of instruction in a small group in a subject of primary concern to his teacher. Such classes will be based in part on the experience of the Harvard freshman seminars. In his final year, every student will be offered an additional opportunity for some kind of close instruction or independent study.

The colleges will compete with one another in an intra-mural sports program, the chief means of implementing a campus-wide emphasis on physical fitness for both women and men and the general goal of "many participants, few spectators".

College Emphases

Although the undergraduate colleges must not become so specialized as to be lopsided and quasi-professional, neither can they be allowed to be simply general liberal arts units with no personality or distinctiveness. Differentiation among the colleges will be induced by having different: (1) provosts, (2) faculties, (3) student bodies, (4) location, architecture, and facilities, (5) traditions and conditions of growth, and (6) sizes. At least the first eight colleges are being planned on a coeducational basis. A desire to experiment with a men's or women's college may arise at a later date.

Another principal determinant of the personality of a college will be its curricular emphasis. No two colleges are expected to share precisely the same conception of the nature and needs of

liberal education, and the freedom to pursue its own definition of excellence will give the college scope to achieve its own identity. That freedom will exist within the broad channels of the needs of the campus, and each college will be expected to make a distinct contribution to the total life of the University. Curricular emphases will be established by the colleges within the framework of campus-wide minimum requirements*; and the curricular emphasis of a college describes not the total substance of its undergraduate program but rather the spice which determines the flavor of its version of general, liberal education. Each college will have a diverse student body; no more than half the students of any college, for example, should have majors in its area of emphasis.

The provost and fellows of each college will be given a specific charge, through an "intellectual charter", which will outline general direction, style, and objectives. The realization of such objectives will be the responsibility of the staff and student members of the colleges working together.

The needs of the campus in the first decade suggest the following college emphases:

COWELL COLLEGE (1965) will be the pilot college and must serve a rather broad spectrum of interest, in addition to demonstrating in practice the viability of the residential college concept. Cowell College will have a normal complement of 600 students, of which 400 will live in and 200 will be commuters. Although Cowell will serve the needs of all students in 1965, it will have from its inception certain perspectives, resulting in large measure from the leadership of its Provost. These attitudes -- belief in the importance of history and the relevance of philosophy and humanistic studies to modern life -- will be reflected more directly in the Cowell curriculum as other colleges are established to share the responsibility for curricular balance. A more complete description of the structure and program of Cowell College forms Part II of this plan, which is issued under separate cover.

COLLEGE TWO (1966) will be distinctively concerned with the modern social sciences. The unifying theme of its program in liberal education will be the problem of the relation of the individual to society and the forces which shape that relationship. This question may illuminate not only the studies in social science but lower division work in such fields as biology and the fine arts as well. Interdisciplinary upper division programs may be planned in such fields as political economy, international affairs, social relations, and behavioral studies. The college will have a normal complement of 700, of which 450 will be residents and 250 commuters.

*See P. 13

COLLEGE THREE (1967) will find its center of gravity in the natural sciences and mathematics, and its intellectual tone will be determined by faculty members who are concerned with communicating with non-scientists as well as with scientific research. Since the science laboratories and classrooms will be located in the campus core, this college will seek its sense of community and cohesion by extraordinary emphasis on colloquia and seminars within the college. It will have 500 members, of which 350 will live in and 150 will be commuters.

COLLEGE FOUR (1969) should create an international version of liberal education in which studies in the humanities and social sciences are combined with intensive experience in foreign languages. Predominant faculty specialties will be those united by a concern with area-languages, and with the nature and development of foreign peoples, ranging from linguistics to comparative government. The total student membership will be about 450, and the intensive, round-the-clock nature of the language study indicates that relatively few should be commuters.

COLLEGE FIVE (1970) will be based on the conviction that the arts are not readily separable from the rest of the world of inquiry. Predominant faculty specialties, ranging from archaeology to modern drama, will be united by a concern for esthetic values. The college will serve the Santa Cruz community as a center for the performing arts and will seek to create in the University a respect for the practice as well as the analysis of creative endeavor. The college will provide its 650 members (including 250 commuters) with an environment sympathetic to creativity, amid surroundings of dignity and good taste.

COLLEGE SIX (1971) may have as its theme the inter-relationship of living organisms and populations with their environment and the capacity of man to plan the development of his own environment. The intellectual vigor of the college will come from the predominant concern of its faculty for biology and ecology in their broadest applications, including programs as diverse as premedical training and environmental design. Several staff members and unmarried students in the natural resources and the basic medical science programs may be associated with this college. The college may have about 650 student members, including 300 commuters.

COLLEGE SEVEN (1973) might be committed to the relevance of historical inquiry and classical thought to modern problems. Its lower division program should have a distinctive "great books" flavor which will appeal to a large number of students who have formed no prior commitment to an academic or professional specialty. This broad appeal will give the college a normal complement of 800 students, of which perhaps 300 will be commuters. It may take the lead in developing upper division programs that include classical

history and languages, intellectual history, political thought, and comparative theology.

COLLEGE EIGHT (1974) could be distinguished by its concern with the city. In asking how communities develop and behave, how urban environment shapes and reflects individual and social character, this college will raise questions that are central to the concerns of the humanities and social sciences. Though provision should be made for field work, attention might focus on intellectual questions that underlie practical study. Because many of those questions have been sharpened by people outside of universities, College Eight is likely to give special importance to the role of the visiting Fellow. This college is planned for approximately 400 undergraduate residents and 250 commuters.

By 1975, the experience of the undergraduate colleges will determine which "collegiate" features may be adapted for use in the arrangements for housing and teaching students in the graduate division and the professional schools. The distinction between the goals of the two kinds of enterprise must be kept clear. The undergraduate colleges, in the mainstream of the liberal arts tradition, seek breadth of preparation and experience. Graduate study concentrates on direct preparation for careers in the professions or in scholarship.

Courses and Curricula

To concentrate student attention on a few subjects at a time, the normal undergraduate program at Santa Cruz will consist of three courses per quarter. Courses may vary somewhat in the number of class contact hours per week, depending on the nature of the subject and the mode of instruction. Requirements are stated in terms of "full courses or the equivalent". Students transferring to other institutions will be issued transcripts showing that each course is valued at 3 1/3 semester or 5 quarter credit hours.

Each of the undergraduate colleges will be empowered to recommend the award of Bachelor's degrees, subject to campus-wide requirements set according to the procedures of the Academic Senate. The total of 36 full courses required for a Bachelor of Arts degree will be the same for all colleges, and the upper division fields of concentration, or "majors", will be administered on a campus-wide basis by disciplinary or interdisciplinary faculty committees drawn from the appropriate fields.

The list included as page 13 represents the minimum general education or breadth requirements, satisfied largely through lower division work, which each college may combine in new ways or augment in a particular field in order to express differing conceptions of the nature of a liberal education. General education does not

end with the sophomore year, however, and colleges will be free to specify certain courses for their upper division students.

To reduce student anxieties and to focus attention on learning rather than memorizing, steps will be taken to modify the grading system. Much can be accomplished under existing Senate regulations. Fuller use can be made of "pass/fail" grades, which were authorized long ago and are little used. Another possibility for securing more meaningful evaluation would be to ask faculty members to write for each student at the end of each course a brief summary of the student's capabilities and achievements. Some liberalization of existing Senate rules on grading may come from the current University-wide reevaluation of curriculum consequent upon the transition to the quarter system.

To facilitate advanced placement of students with exceptional backgrounds and achievements, taking courses by examination and meeting requirements by examination will be encouraged. Students who are capable of acceleration will be given full opportunities to proceed at their own pace.

Santa Cruz will welcome as transfers those who have begun their college careers elsewhere, including a considerable input from California's junior colleges. Every reasonable effort will be made to ensure the transferability of students and their programs between Santa Cruz, other campuses of the University, and other institutions, without loss of credit. In the initial period, however, because of its limited course offering, Santa Cruz can accept transfers only at the junior level.

PROPOSED CAMPUS-WIDE REQUIREMENTS, BACHELOR OF ARTS DEGREE

<u>Subject</u>	<u>One-quarter courses or the equivalent</u>
Humanities and Fine Arts	3
Social Sciences	3
Natural Sciences	3
Foreign language	(4) competency through level of course number four*
History	(1) may be satisfied by examination or course
(1) American History and Institutions requirement	
(2) lower division <u>or</u> upper division course related to college emphasis	1
Mathematics	(1) may be satisfied through placement examination*
English composition	(1) may be satisfied through placement examination*
<hr/>	
TOTAL BREADTH REQUIREMENTS	10-17
Major field (Upper Division	7-10 no less than 7 nor more than 10
Courses related to major, and electives	9-19
<hr/>	
TOTAL REQUIRED FOR GRADUATION	36 courses

*All or part may be completed in high school; placement examination required for validation.

Forms of Instruction

The Santa Cruz campus will use the usual methods of instruction: lectures, lecture-discussion, laboratories and the several forms of close instruction.

Lectures will be used for presentations to large groups (50 to 500) mainly when the "coverage" of bodies of material is involved. Small lecture courses will be avoided as much as possible, but in the early years some are inevitable. Frequently lecture courses will be taught by faculty teams, each member lecturing in his own specialty and the group planning the course and appraising the results. As soon as facilities are available some lectures will be carried to the colleges by closed circuit television.

Seminars will be employed to focus small groups of students (6 to 15) on inquiry and investigation. This form will be used both for the beginning student to open up a field and for the advanced student to round out his studies with some taste of research in a problem of importance.

Tutorials at Santa Cruz will be limited to relatively advanced work in the student's field of specialization. This special form of close teaching will be characterized by small enrollment (1 to 5) and by the requirement of substantial prior work in the field. Tutorials will require much writing and searching criticism of form and content.

Independent study may be substituted for courses by students with exceptional records. It will involve study and reading guided by a faculty adviser. It is likely to have much use in the opening years when the course offering is limited.

Laboratories will be used, mainly in the sciences, to provide the student with the first-hand experience that cannot so well be obtained through other modes of instruction. At the advanced level, the laboratory may provide occasion for scientific inquiry and even original research.

ADVANCED INSTRUCTION AND RESEARCH

Groupings by Discipline

For a variety of reasons, it will be necessary to organize campus-wide academic units that cut across college lines. Graduate work and research will be important considerations from the beginning; in many fields, distinction is unlikely to be achieved without a critical minimum of colleagues who associate frequently and who have access to appropriate facilities -- laboratory, library, and other. Groupings by discipline are also needed to fix the responsibility for determining professional competence of staff, for judging the quality of research work, and for guiding graduate students. Contacts by discipline with colleagues in other institutions, and in learned societies -- regional, national, and international -- are desirable to place students, to find outlets for creative work, and to secure informed reactions to one's ideas and experiments.

The broad grouping of the arts and sciences initially will be: Humanities, Social Sciences, and Natural Sciences. The Humanities will embrace Philosophy, Literatures and Languages, History, and the Fine Arts. The Social Sciences will include Anthropology-Sociology, Economics, Government, and Psychology. The Natural Sciences will combine the biological with the physical and encompass Biology, Chemistry, Mathematics, and Physics. Exceptional results in teaching and research should come from the broad interdisciplinary cooperation that can be fostered with such combinations.

Ultimately the arts and sciences groupings may become schools, but for the initial period it would suffice if they are organized as "divisions". In any case, they will be composed of all members of the Academic Senate holding appointments in relevant fields, and they will be headed by vice chancellors or deans who share power and responsibility with the college provosts in initiating and recommending decisions on academic personnel matters, including appointments and promotions.

Typically, a new academic position will appear in the budget on a joint basis, for example, assistant professor of history and faculty fellow of Cowell College. The provost and fellows of Cowell, on one hand, and the vice chancellor or dean and faculty of the division, on the other, will have mutual responsibility for finding and recommending the appropriate candidate for the post. Who takes the initiative and which recommendation to follow in case of disagreement will be determined by the Chancellor,

advised by the appropriate committee of the Academic Senate.

Graduate Work

Although initial emphasis will be given to undergraduate work, the graduate function is of equal importance in the final development of any campus of the University of California. Ten graduate students will be pioneers in the Graduate Division on opening day in 1965. Some will have roles as junior preceptors in Cowell College, and some as teaching assistants. Graduate instruction will expand to 125 graduate students by 1968. By 1975, graduate students will constitute over fifteen per cent and by 1995 perhaps forty per cent of Santa Cruz enrollment. From the beginning, faculty must be recruited in the light of the needs of graduate instruction. The Graduate Division will have a substantial voice in the choice of personnel and in the development of new graduate programs. The Graduate Division will have a positive role in recommending faculty appointments and promotions on the basis of advanced teaching, research, and professional competence.

Ph.D. programs will be offered, in the first years, only in disciplines selected for early emphasis. They must be supported by exceptional faculty strength and excellent library and laboratory facilities. To secure well-rounded guidance at the outset and to provide additional quality control, faculty members of other campuses of the University and other institutions will be invited to sit as members of Ph.D. committees.

Early attention will be given to developing combined programs that will permit a student to earn Bachelor's and Master's degrees in five years, receiving both a full measure of liberal arts work in a college and substantial graduate instruction in a discipline. The Santa Cruz campus will also undertake to provide graduate training for the scientific and engineering personnel employed in the industrial complex of the Santa Clara Valley, possibly utilizing the proposed University Extension Center at Sunnyvale.

Professional Schools

The statewide Academic Plan mentions that Santa Cruz might develop schools of Engineering and of Business. Other possible specialties that might affect the professional school alignment are Basic Medical Sciences, Landscape Architecture, and Natural Resources and Recreation.

The School of Engineering and Applied Sciences is scheduled for its first input of 125* students in 1967. It is expected to increase steadily to 425 in 1975, after which it will stabilize at something less than 10 per cent of the campus student total. The main effort probably should be to produce a well-rounded Bachelor of Science in engineering sciences, leaving specialized study to graduate work. Students would enter at the junior year, either from one of the Santa Cruz colleges or by transfer from another accredited institution. A special effort will be made to enable members of the colleges to remain such, if they so choose, after they enter Engineering. It may be possible to devise a program by which a student can proceed directly to a Master of Science degree in Engineering in fifteen quarters. The feasibility and desirability of a study/work alternation in Engineering will be examined. The four quarter calendar will permit using two quarters for work in industry and six for study at Santa Cruz. This will make one training job suffice for four upper division Engineering students.

Business might be started in combination with Engineering or separately. The initial students are expected in 1968, when there might be 50 students, rising to 300 in 1975. Undergraduate students primarily interested in Business would be encouraged to major in Economics or some other liberal arts program in one of the colleges. The Business school would stress a strong Master of Business Administration program, based on two years of graduate work following a solid undergraduate preparation. The possibility of study/work combination with business and financial concerns of the San Francisco area will be explored.

Whether Natural Resources should be organized on a school basis depends to a considerable extent on whether Forestry will be needed. A professional school of Forestry at Santa Cruz would not be possible until scientific and other supporting disciplines are strongly established. The best initial form for Natural Resources may be a center or an institute. The California Department of Parks and Recreation, acting under a mandate from the Legislature, is currently reviewing the programs offered by the various echelons of higher education in the State and the needs of the many agencies which require personnel trained in the fields of recreation and park and wildlife management. The Santa Cruz campus represents the University on the committee which will help formulate a division of educational responsibilities between the junior colleges, the state colleges, and the University. There is an important role for Santa Cruz in the field of research concerning the recreational uses of wild and undeveloped areas and the problem of saving for posterity

* Student numbers on this page are high range projections.

such natural resources as water, soil, minerals, forest, wild-life, and shoreline. Research and teaching teams will be of service to public agencies involved. All work in this field would build on rigorous study of the pertinent disciplines. There will also be stress, in undergraduate general education, on natural history and ecology; these appropriately could be related to the curricular emphasis of the sixth college. Pending a decision regarding the proper organizational form for study in this field, it seems wise to assume a modest beginning, with 50* students, in 1968. The total enrollment might be 175 by 1975.

Reassessment of California's need for medical manpower has indicated great expansion of facilities for medical education in the University. Although the Santa Cruz area will not for many years supply the population base required for clinical instruction in medicine, Santa Cruz faculty and facilities in natural sciences may be called upon to launch a program in basic medical science in the 1970's. A firm decision to add such a program will stimulate development in the supporting disciplines and insure such readiness. Medical students would complete two pre-clinical years at Santa Cruz and do their clinical work at San Francisco or some other teaching hospital and full-scale medical school. The program might well be based on the Tschirgi plan for the University of Hawaii, and culminate in a Master's degree in health sciences. Physical and academic planning for the program should begin by 1968, and the first class of 32 students admitted in the fall of 1972. Beginning in 1973, the normal enrollment of the school might well be 64 students.

Although Landscape Architecture is "assigned" to Santa Cruz, professional training in this field is usually carried on in conjunction with architecture and planning. A need for the latter at Santa Cruz may not be determined for many years. In the meantime, it appears best to schedule Landscape Architecture for a late start (1972) with a modest number of students (50) rising to 150 in 1975. A creative role for Santa Cruz in the realm of ornamental horticulture may emerge from the interest in cooperative endeavor expressed by the Saratoga Horticultural Foundation. Now located in the Santa Clara Valley, the Saratoga Foundation has pioneered in research leading to the improvement of trees and shrubs.

Research Specialties

In addition to the specialties suggested in the statewide Academic Plan (and mentioned under "professional schools" above) there is interest in other possibilities, which might begin as informal pockets of strength in the colleges, and later emerge as centers or institutes. Among those under consideration are:

* Student numbers on this page are high range projections.

1. Languages and Linguistics. The Defense Language Institute, West, at Monterey, has one of the largest language teaching staffs in the nation; some members of that staff are available either on part-time or full-leave basis for participation in studies of linguistics and translation. Early recruitment of a staff in linguistics for planning in this area appears advisable, in view of the demand by Federal personnel for graduate work in that field. An initial task will be to help develop programs for the fifth residential college. Transfer of administration of the University's contractual arrangement with the Department of Defense to Santa Cruz is currently under consideration.

2. South Pacific Studies. Although Far Eastern studies are well developed on other campuses and in other institutions, the South Pacific area has had little concerted attention. In the selection of faculty, Santa Cruz will assemble scholars in Anthropology, History, Geography, Government, Languages, and Sociology with interest and field experience in the area. As the group gathers strength, it might expand northwest into the equatorial areas of Southeast Asia and south into the Antarctic region. The library collection in the literature of Polynesia and Oceania has been launched. It began with the gift of the Knowles Ryerson collection on the South Pacific Commission and the Pacific Islands and has been augmented by works on voyages of exploration donated by Chaffee Hall, Sr.

3. Astronomy and Astro-Physics. Early distinction for Santa Cruz in this important scientific discipline will be assured if arrangements are completed to transfer the professional staff of the Lick Observatory from Mount Hamilton to Santa Cruz. Such a transfer would benefit the Santa Cruz campus by strengthening its science staff and attracting other leading scholars, particularly in physics and mathematics. It would benefit the Lick staff by providing the resources of a university campus, including the proximity to scholars in other fields and the opportunity for graduate and undergraduate teaching. Appropriate space should be available in the second science unit, scheduled for occupancy in 1968. If the transfer proves feasible, it should be carried out on or before that date.

4. Marine Biology. Santa Cruz has available unusual facilities for the study of marine resources and opportunities for collaboration with established research institutions:
 - a. Año Nuevo Island, a few miles from Santa Cruz, has become, since it was relinquished by the Coast Guard in 1948, the most important rookery and breeding ground for seals and sea lions outside Alaska. Scientific work at Año Nuevo is currently being carried out by the Stanford Research Institute, under

agreement with the California Division of Beaches and Parks. The S.R.I. group has asked the Santa Cruz campus to cooperate in its studies, and a specialist in mammals of the sea will be an early addition to the biology staff.

b. Similar opportunities exist for cooperation with the Hopkins Marine Station, Pacific Grove, which is also affiliated with Stanford. Founded in 1893, it is the third-oldest marine laboratory in the United States. The organization conducts year-round research in oceanic biology, operates several laboratories, inshore collecting skiffs, and the sea-going research vessel, Te Vega. The Hopkins faculty engages in an instructional program throughout the year and, with the assistance of visiting scholars, provides an intensive program during the summer quarter. Collaboration has been strengthened by part-time appointment of Hopkins emeritus staff to the Santa Cruz biology faculty.

c. The Beaudette Foundation for Biological Research is a private organization concerned, among other problems, with the use of products of the sea to supply the food needs of man. The Foundation has research facilities at Moss Landing, about 30 minutes from the campus. It has the use, much of the year, of the research trawler Neptunus Rex. The Foundation publishes the journal "The Pacific Naturalist". In December, 1963, the directors of the Beaudette Foundation amended its corporate articles to provide for the distribution of its assets to the Santa Cruz campus, subject to acceptance by The Regents, if the Foundation should be dissolved. The Foundation has curtailed its activities and is now considering disposition of its resources. A committee of leading University scientists has examined the facilities and has found them of potential usefulness.

d. A tidelands strip, adjacent to Natural Bridges State Park, has been deeded to The Regents by Mr. and Mrs. Keith Shaffer and Mr. and Mrs. Clarence Nielson of Santa Cruz. This 900 foot tidepool area, two miles from the campus, will be within easy reach of biology classes. Funds are available during 1964-65 for building a modest facility in which gear can be secured.

5. Conservation. Whether or not instruction in Natural Resources is organized on a professional school basis, conservation would be an obvious interest of any institution located in the natural setting of the Santa Cruz campus, and it would be a central theme for emphasis by the sixth residential college. A group of faculty members in that college may be associated with an organized unit sponsoring research in conservation. The campus site itself has several discrete areas that can serve as natural preserves. Acquisition of the Fall Creek property near Felton would bring under University control one of the finest wilderness tracts of

the region, with 2,400 acres of pre-existing natural laboratories (the mountains, running stream, and the forest). Another noteworthy asset is the Hastings Reservation, an extensive acreage in the upper Carmel Valley near Jamesburg. It is owned by the University and administered by the Berkeley campus. This high, arid land provides a special environment for research in conservation and wildlife management.

6. Psychology. Considerable opportunities exist for early distinction in some fields of Psychology. Since extensive laboratories may not be possible at first, early concentration is indicated in fields which are less demanding on space. Social Psychology could provide an appropriate beginning. The second residential college will emphasize, on the undergraduate level, the same interdisciplinary contact among the social sciences as is encouraged on the postgraduate level at the Center for Advanced Study in the Behavioral Sciences, Stanford. At a later stage, other fields of Psychology will gain strength along with the development of physiological studies in the life sciences.

7. Mathematics. The rapid changes in Mathematics, the striking developments in computers, and the proximity of the International Business Machines plant in San Jose, combine to suggest the importance of mathematics for initial emphasis. Instrumentation will be available at the University and at industrial firms of the area. Mathematical studies will be an important feature of the curricular emphasis of the third residential college.

STAFF AND SERVICES

Teaching Staff

In making projections of teaching staff, several considerations must be borne in mind. The all-University faculty-student ratio of 1 to 16 and teaching staff-student ratio of 1 to 12 will be achieved by the time the student population reaches 6,000. Because graduate instruction is not expected to be a major factor at the start, non-faculty teaching staff will begin modestly with a few teaching assistants and junior preceptors, some of whom may be graduate students at Berkeley or elsewhere.

As in projections of student enrollments, estimates of teaching staff size are made on two bases: a high range and a low range.

Assuming the growth in students shown in Table I, rising to 7,200 by 1975-76, the projected growth of teaching staff is as follows:

Table III

PROJECTED TEACHING STAFF*,
BY FACULTY AND NON-FACULTY, 1965-1975

(HIGH RANGE)

<u>Teaching Staff</u>	<u>1965</u>	<u>1966</u>	<u>1967</u>	<u>1968</u>	<u>1969</u>	<u>1970</u>	<u>1971</u>	<u>1972</u>	<u>1973</u>	<u>1974</u>	<u>1975</u>
Total	65	125	190	257	329	379	407	444	474	541	600
Faculty FTE	60	113	158	210	265	300	320	343	363	408	450
Other (TA) FTE	5	12	32	47	64	79	87	101	111	133	150

If student growth follows the pattern suggested in Table II, reaching 5,350 by 1965-75, the increase in teaching staff may be along these lines:

Table IV

PROJECTED TEACHING STAFF*,
BY FACULTY AND NON-FACULTY, 1965-1975

(LOW RANGE)

<u>Teaching Staff</u>	<u>1965</u>	<u>1966</u>	<u>1967</u>	<u>1968</u>	<u>1969</u>	<u>1970</u>	<u>1971</u>	<u>1972</u>	<u>1973</u>	<u>1974</u>	<u>1975</u>
Total	65	125	163	208	257	271	295	346	393	432	446
Faculty FTE	60	113	136	170	208	215	232	267	302	326	334
Other (TA) FTE	5	12	27	38	49	56	63	79	91	106	112

To determine the appropriate distribution of faculty by rank, various arguments and experiences must be considered. There is wide agreement that Riverside started with too lean a mix, over-weighted with junior staff and insufficient in the tenure ranks. On the other extreme, San Diego emphasized senior appointments and built research strength rapidly. To repeat the San Diego approach would require funds that are not likely to be available, and would aggravate the concentration in tenure ranks already so great at the Berkeley and Los Angeles campuses. Consequently a middle road, that provides a majority of junior appointments, but a strong representation in the upper ranks, is suggested. Again the numbers will vary with the size of the student population.

If student population of Table I is assumed, the faculty distribution by rank might be:

*These numbers will need to be increased when Santa Cruz goes on year-round operation.

Table V

FACULTY, BY RANK* 1965-1975

(HIGH RANGE)

<u>Faculty</u> <u>by Rank</u>	<u>1965</u>	<u>1966</u>	<u>1967</u>	<u>1968</u>	<u>1969</u>	<u>1970</u>	<u>1971</u>	<u>1972</u>	<u>1973</u>	<u>1974</u>	<u>1975</u>
Total	60	113	158	210	265	300	320	343	363	408	450
Prof.	20	30	38	48	59	64	68	72	74	84	90
Assoc. Prof.	10	20	27	40	63	69	80	87	92	104	115
Asst. Prof.	25	53	78	106	123	147	152	164	177	200	225
Instr.	5	10	15	16	20	20	20	20	20	20	20

Should student population follow the lower growth pattern shown in Table II, this might be appropriate distribution by rank:

Table VI

FACULTY, BY RANK* 1965-1975

(LOW RANGE)

<u>Faculty</u> <u>by Rank</u>	<u>1965</u>	<u>1966</u>	<u>1967</u>	<u>1968</u>	<u>1969</u>	<u>1970</u>	<u>1971</u>	<u>1972</u>	<u>1973</u>	<u>1974</u>	<u>1975</u>
Total	60	113	136	170	208	215	232	267	302	326	334
Prof.	20	30	37	45	50	54	58	63	70	79	82
Assoc. Prof.	10	20	26	35	45	47	59	77	88	94	98
Asst. Prof.	25	53	62	78	98	100	103	117	134	143	144
Instr.	5	10	11	12	15	14	12	10	10	10	10

Senior Santa Cruz faculty will be drawn from many backgrounds and areas; junior staff will come mainly from the leading graduate schools, as do those of other campuses of the University. Special mention is made of academic staff from three other promising sources: other campuses of the University, retired professors, and women.

When it can be done without disrupting existing campuses, leadership for the new campus will sometimes be drawn from within the University. This will help to assure an early community of interest, understanding of Senate and other procedures, and common devotion to the quality standards of the University.

Some academic retirement plans still require termination of active service at 65 years of age. Santa Cruz will seek those retirees

* These numbers will need to be increased when Santa Cruz goes on year-round operation.

who are near the peak of their teaching effectiveness. A new campus badly needs the mature judgment of seasoned scholars, yet in many fields it is difficult to attract the great while they are in their forties and fifties. Consequently, it is proposed to canvass regularly prospective retirement lists and to appoint some of the best. Santa Cruz might soon develop a reputation for providing retired scholars a place where they could continue productive work so long as they are able.

Santa Cruz will have a special need for women faculty members. Women are required as faculty fellows and preceptors in the residential colleges. The supply of women coming from the graduate schools is small, but there is a large reservoir of trained and partially trained women scholars whose roles as wife and mother have become less demanding and who could be persuaded to return to part or full-time teaching. Many will require refresher courses, and the University should be prepared to supply them.

There will be an extra concern at Santa Cruz for faculty housing. The college plan requires close association of faculty fellows with the many activities of their colleges. For this reason, provision will be made for some who are without children to live in college facilities. Others should be given the opportunity to live close by if they wish.

To that end, the University must be vigilant to avoid the situation, such as that at UCLA, where land prices and high rents make satisfactory family housing near the campus generally beyond the means of much of the University staff. The ultimate insurance at Santa Cruz is the University ownership of sufficient land to correct such a situation if it should arise. A large acreage will be held in reserve for future staff housing, but it need not be developed so long as private housing is available in the campus environs on reasonable terms. Unless adjacent large holdings of land are held out of development, it appears unlikely that an on-campus faculty housing project will be needed for many years.

Library

The library will be the intellectual center of the Santa Cruz campus. From the beginning it will be molded by four formative influences:

1. A centrally located undergraduate collection of 75,000 carefully selected volumes will be available on opening day, thanks to the New Campuses Library Program (3 for 1) carried out by the San Diego campus. Over and above this beginning collection a considerable quantity of periodical and newspaper backfiles, government publications and specialized research materials will have been added locally.

2. Each residential college will be provided with a library, reading room, and a collection of 10,000 to 15,000 volumes. These will include reference works and a quality paperback collection encompassing a broad spectrum of human knowledge. College libraries will be financed from gift sources, if possible.

3. The emphasis of the first two colleges on Humanities and Social Sciences will require extraordinary support for the library to build up research collections in the various areas of specialization.

4. There will be available, through inter-library loans and travel-by-readers, the vast resources of the Berkeley and other university libraries; it is proposed to operate an inter-campus bus daily from Santa Cruz and to encourage faculty members and graduate students who have need for Berkeley and San Francisco collections to use them fully and frequently.

As soon as the library building is completed in 1966, it should be a central focus of faculty research work in the Humanities and Social Sciences. Carrels and other facilities will be provided for the convenience of the faculty and graduate students. As the campus grows and the need for quick delivery of materials to far corners of the campus arises, pneumatic and other methods may be developed.

Among the major determinants of a desirable rate of growth for the Santa Cruz collection will be the:

1. Projected increase of student population from 500 in 1965 to 27,500 by 1995;
2. Teaching staff augmentation from 60 in 1965 to 2,290 by 1995;
3. Rise of the graduate component in the student mix from a few in 1965 to perhaps 12,000 in 1995;
4. High priority placed on achieving distinction in the Humanities and Social Sciences.

The following tabulation indicates a possible pattern of quantitative expansion of the library:

<u>Year</u>	<u>Enrollment</u>		<u>Volumes</u>
1965	500		75,000
	(High Range)	(Low Range)	
1970	4050	2900	250,000
1975	7200	5350	500,000

Calendar and Year-Round Operation

A decision has been reached in favor of the quarter calendar. Rather than to organize initially on the basis of semesters and be faced with the necessity of changing after a year or two, Santa Cruz will begin with the quarter system in 1965. For the first quarter instruction will begin in early October. The fall quarter will end just before Christmas, the winter quarter in Late March, and the spring quarter in mid-June.

Designing the program of a summer quarter presents a dilemma to the new campus with a small enrollment. If it operates a summer quarter with full offerings, the number of students is likely to be below the level required to make the proposition financially feasible; if it does not operate at all, it denies students the opportunity to accelerate and it fails to contribute to the University's effort to provide full utilization of instructional plant.

The best solution appears to be a limited offering that will meet some or most student needs yet avoid costly small lecture classes. In addition, the campus will specialize in language instruction, using intensive methods developed at the Defense Language Institute, and make possible the completion of the equivalent of three courses or more in the summer quarter. If the offering appeals to students on other campuses, it may be possible to offer a number of languages, including some of those not taught in the other terms. A balanced offering in area studies and certain other course work might round out the summer program. Residential colleges would offer ideal facilities for summer institutes and short courses. As soon as enrollments are sufficient, however, the Santa Cruz campus will operate a full summer quarter in addition to its intensive language and other programs.

Television, Radio and Teaching Machines

The latest developments in communication and programmed learning will have a prominent part both in internal teaching and in external relations. Television cables will be built in and among the major buildings, and closed circuit television will make it possible for a single lecturer or a special event to reach classes in the various colleges without convening all students in a single large auditorium.

The campus also is canvassing the possibility of utilizing open circuit television. It appears that the University, in cooperation with the three junior colleges of the region, could sustain a relatively inexpensive educational network that would establish

effective communication between higher education and the surrounding communities, which are largely outside of the range of San Francisco stations.

Student operation of an FM radio station can be another educational activity of considerable value. It would provide both a link tying together the several colleges, and a means of outreach to the community.

The availability of programmed materials, whether presented by teaching machines or not, will increase the possibility of self-instruction by students. The teaching staff at Santa Cruz will be encouraged to experiment with such new materials and mechanical devices that might minimize teaching time devoted to elementary and routine courses, and free the teacher for close instruction of students at more advanced levels. Expert services on how to devise and use programmed materials will be provided for teaching staff by an agency of the library.

Continuing Education

The Santa Cruz campus shares responsibility for University Extension work in four Central Coast Counties (Santa Cruz, Monterey, Santa Clara, San Benito), and three Central Valley Counties (Fresno, Merced, Madera). During the 1963-64 academic year, a series of University-sponsored events brought the Santa Cruz community an introduction to members of the Santa Cruz staff and to the cultural and intellectual resources of the University of California.

This established for community relations a foundation which will be enhanced by the introduction of a "saturation" program of extension classes beginning with Monterey and Santa Cruz Counties. Special emphasis will be placed on non-credit liberal arts and professional courses for college graduates. The early completion of the proposed Sunnyvale Center will be helpful in getting a similar program under way in Santa Clara County.

Each academic unit and disciplinary group will understand that the University's instructional obligation is not limited to undergraduate and graduate students, but that it has a duty to help bring lifelong learning to its graduates, wherever they are, and to that portion of the community that is both qualified and interested. In the later stages of development, consideration will be given to the establishment of a residential adult college, possibly combined with a conference center. The climate and non-metropolitan setting of Santa Cruz make it admirably suited to such an activity. Conference activity on a modest scale may ultimately be possible near Boulder Creek, on the mountain

property given by Dr. and Mrs. Adolph C. Miller to the University. The property, to be developed initially as a family-style summer camp for members of the University staff, may be suitable for small conferences in other seasons. In the meantime, a beginning can be made by utilizing the Asilomar conference facilities of Monterey Peninsula.

As the campus produces graduates, an extraordinary effort will be made to follow them during their first decade or so with a warm interest and a wide variety of services. The campus, the college, and the discipline will provide graduates regularly with suggestions for reading, cultural opportunities, community development, civic activities, and service beyond self-interest. Alumni will be invited back to the campus and their colleges for conferences and institutes on matters of importance and mutual interest.

The campus will provide some museum or gallery type facilities for permanent and temporary exhibits. Among the first may be a center of photographic art, which would collect the negatives of great photographers of the West and display important examples of past and current photography. Mr. Ansel Adams has suggested that Santa Cruz is ideally located for such a role. Mr. Beaumont Newhall, director of the George Eastman House of Rochester, and Mrs. Nancy Newhall, who first proposed this center, have offered books and photographs, and have suggested the availability of hundreds of important duplicates by donation.

The University will offer a rich fare of musical, theatrical, and artistic events that will draw patrons from the San Francisco and Monterey Bay areas. Summer concerts in the redwoods, utilizing as an outdoor theater the splendid upper quarry, may become a Sunday afternoon tradition. An early objective will be to build, partially from gift funds, an auditorium that is well suited for musical and dramatic productions.

1970

CAMPUS ADMINISTRATION



