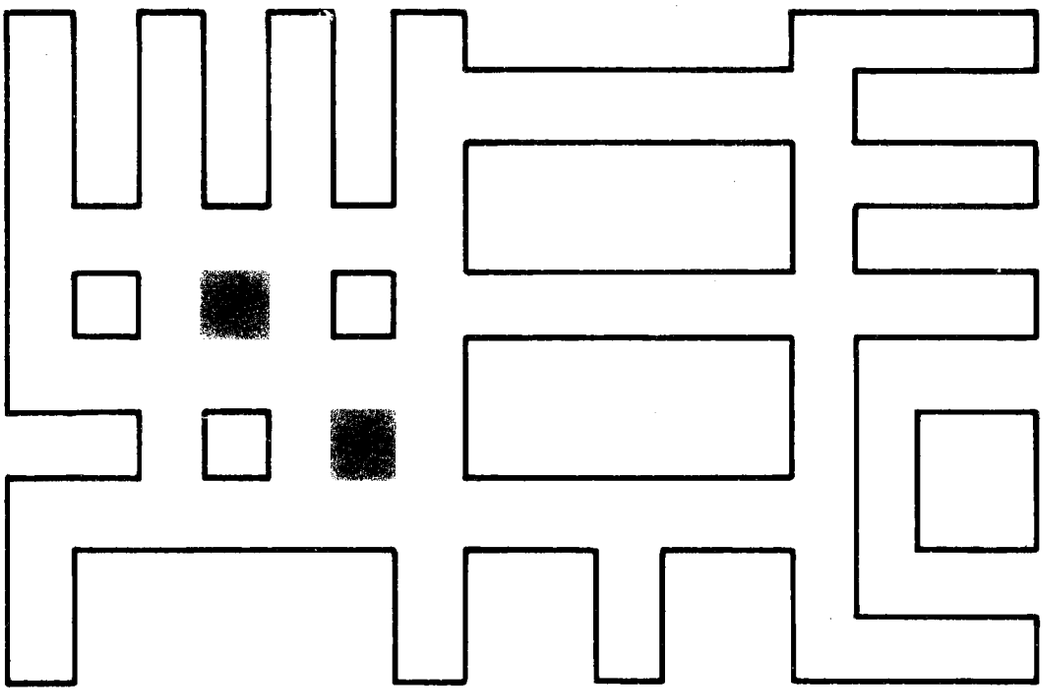
UNIVERSITY OF CALIFORNIA, SAN DIEGO



The Undergraduate Educational Program in The First College

All announcements herein are subject to change without prior notice.

November 1, 1964

INTRODUCTION
THE IDEA OF THE FIRST COLLEGE

The faculty of UCSD recognizes that it has been given a unique opportunity to shape an undergraduate curriculum which will, insofar as any educational program can, prepare its students for their lives as citizens of the modern world. From the outset of its planning, the faculty has asked itself: What sort of knowledge, and in what areas and in what depth must students master if they are to be liberally educated, and how specialized must that education be in the undergraduate years?

The educational philosophy of The First College has been developed in answer to such questions. As adopted by the UCSD faculty it is as follows:

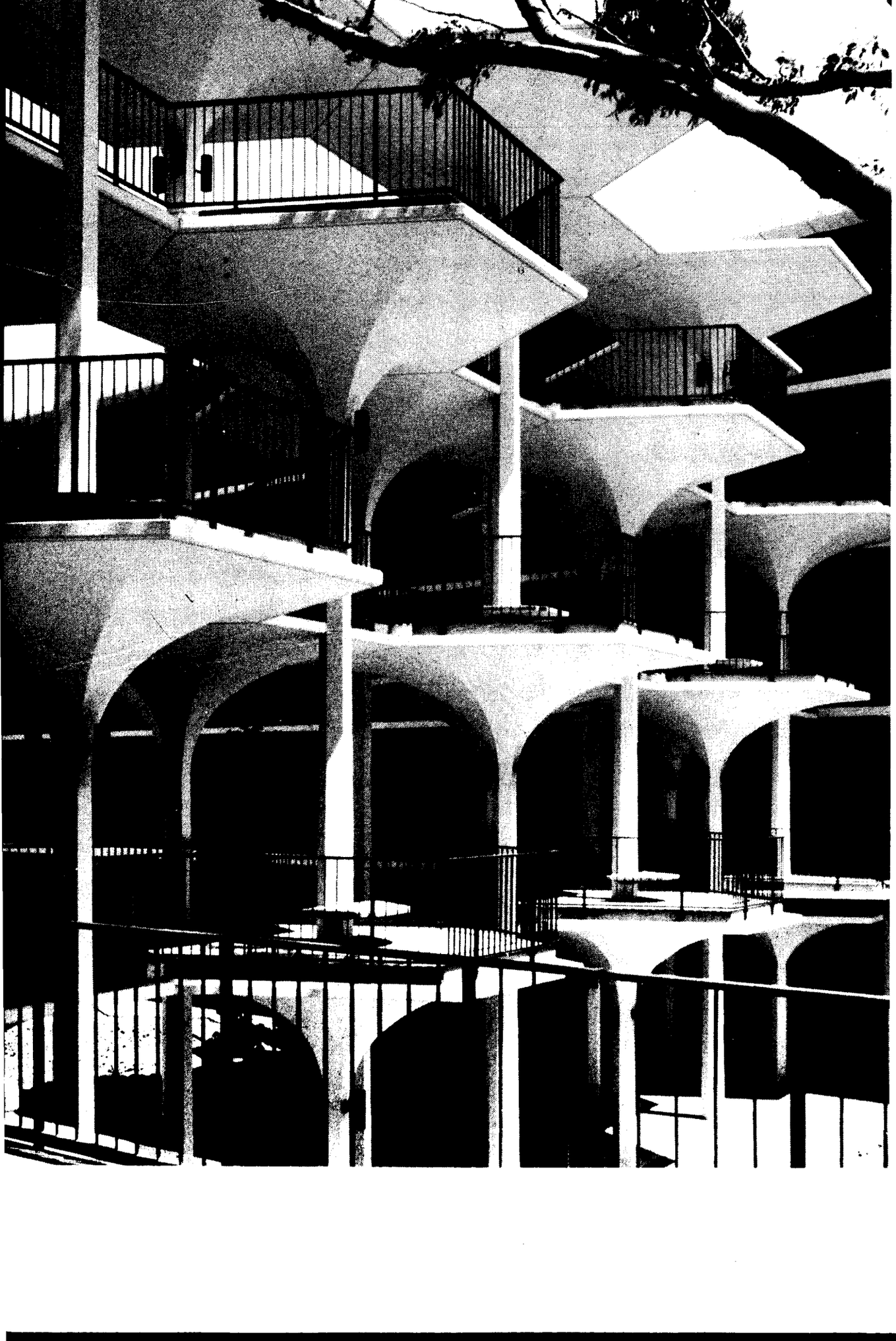
The First College has been formed following the academic master plan for the projected development of the University of California, San Diego. Other colleges will be developed later which, like the First, are intended to offer students and faculty the opportunity of close interaction in small academic units and the advantages of a major university.

The undergraduate program of The First College is based on the principle that, before being granted a bachelor's degree, every student must give evidence of having attained:

1. An acceptable level of general education in mathematics, foreign language, the physical, biological, and social sciences, and the humanities;
2. Preprofessional competence in one academic discipline;
3. A thorough understanding of an academic area outside his major field.

As other colleges are created at UCSD, there will be other answers. But it is most likely that they will differ from the one here given more in form than in substance. Meantime, it should be noted that this answer to our fundamental question derives not only from the faculty's study of the capacities, potentialities, and needs of the students of The First College, but from the study of the capacities, potentialities, and needs of the College's staff and its facilities.

The uniform freshman-sophomore curriculum is intended to bring the student to an understanding of the major ideas and disciplines of our culture. The student, if he is to be prepared to be a citizen of the world, must have some understanding of the fundamental concerns, methods, and powers of the humanities and the arts, the social and behavioral sciences, the physical and biological sciences, and the applied sciences.



The UCSD First College lower-division curriculum assumes that an undergraduate should not settle firmly upon his major field until he has had a chance to know something of all the fields which are open to him. His general education must then be thorough enough to allow him to understand the possibilities of those fields. He must, early in his career, know, as it were, three languages: his own, a foreign language, and that other worldwide language, mathematics. He will come the better to know his own language as part of his work in a two year humanities sequence, which is an introduction to literary, philosophical, and historical study—and which calls for the regular writing of essays, each to be gone over tutorially in a one-hour session with his teacher. He will study a foreign language as a spoken, vital means of communication to be used day-to-day; studying that language, he will come to know something of the general nature of language itself. And he will study mathematics at once as part of general education (the mathematical mode of analysis and understanding—and its power and beauty) and as an introduction to work in the physical and biological sciences, which will follow in sequence from the work in mathematics and which will introduce him to the substance and methods of modern science. Finally, he will, as a sophomore, study the social and behavioral sciences—sequentially deriving from what he has learned of mathematics and the humanities. Also, he will have some elective time and will be able to take courses in disciplines which he would like further to explore. Once he has completed this program—and he can proceed at his own particular pace, if he wishes—he will be ready for the relatively more specialized work of the upper division. More important, he will have become increasingly a member of a community of young scholars and will be all the more ready to live intelligently and responsibly as a citizen of the world. Not yet a specialist, he will nonetheless be ready to become one, and also to understand and appreciate the specialties of others. Only through such a curriculum of general education, the UCSD faculty believes, can the student be given that capacity to understand and appreciate which is the mark of the good, responsible citizen of the world.

Yet the student's general education will not stop at the end of the sophomore year; for every upper-division student will be required to do a substantial fraction of his upper-division course work in an area of learning which is completely outside his major field. He will thus continue to study in one of the areas in which, as a freshman and sophomore, he has become particularly interested. Moreover, the courses thus elected will have to compose an integrally related sequence—so that the student will carry away with his B.A. not only his major preprofessional competence and his lower-division general education, but also an acquaintance with a body of knowledge developed enough that he can continue informal study of it as part of his adult life. The major in one of the literatures, thus, might take a complex of courses in the behavior of groups or in the process of learning, or in mathematics, or in the biological sciences. And the major in chemistry might take a complex of courses in the Renaissance (history, literature, art, philosophy) or in linguistics and related psychological problems. The number of these minor concentrations, as they are called, must be, early in the history of The First College, limited by the number of upper-division courses the staff can offer. Still, the number is, even at the outset, sufficiently great to offer adequate breadth and depth in continuing general education. For general education is effective only if it is continuing—indeed, only if it is offered in such a way that it continues after the student's college years.

THE LOWER DIVISION PROGRAM

Each UCSD student is required to demonstrate an acceptable level of knowledge in the humanities, social sciences, language, mathematics, and the physical and biological sciences before he chooses a major academic field for specialization during his junior and senior years. Many students will reach the required level of basic knowledge through a set of recommended courses that will normally require approximately 80 percent of their total course hours during the first two years. The remaining time will be applied to electives in preparation for the upper division courses in their major fields.

Students are encouraged to meet the common lower division requirements and the upper division major requirements as rapidly as possible. Most will be able to complete an undergraduate program in four years. However, they are not bound to fixed amounts of time or numbers of hours. Students are encouraged to meet course requirements by making the fullest use of prior training and individual study. Students who demonstrate superior achievement and competence in an academic area will be offered advanced courses and individual-study programs providing them with an opportunity to complete degree requirements in fewer than four years.

Students who demonstrate advanced achievement may obtain degree credit for certain courses by passing special examinations. The nature of the examination depends on the subject; although usually the examinations will be written or oral, a department may select an alternate method of determining the degree of a student's competence. The examinations are prepared and administered by the department concerned under the general supervision of Academic Senate members of the college.

A student who successfully passes an examination for degree credit without taking a course will receive credit for the course toward fulfilling his degree requirements. No limit is set on the maximum credit that may be earned by examination. Students who are capable of completing their bachelor's degree requirements in an accelerated program will be encouraged to select graduate courses in upper division electives.

COMMON LOWER DIVISION REQUIREMENTS

The student may meet the minimum lower division requirements in the principal fields of knowledge by taking a recommended set of courses. The prerequisites for these courses are met by the general admission standards of the University.

The recommended courses are:

Humanities

The humanities sequence is designed to introduce the student to his cultural heritage. It rests on the principle that this heritage is found, not in text books about the history of Western Civilization, but in the great documents themselves in which it has assumed concrete form. These documents—literary, philosophical and historical—the student is invited to confront directly; by lecturer, group discussion, themes and conferences he will be aided in learning to interpret them, to discover their interrelations and to perceive their continuity.

The sequence opens with the study of contemporary works, then goes back to the Judaeo-Grecian beginnings and traces the development of Western Civilization forward again to the present. Essential to the course are the student's themes; in these the student will be asked to come to direct and personal terms with what he has read, and to acquire the skills of clear and cogent expository writing. Every theme will be discussed intensively in individual conferences between student and instructor.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Social Sciences

The social sciences requirement, a one-year sequence of 6 semester-hours (or 9 quarter-hours) in the sophomore year, offers students intensive instruction in selected aspects of the social and behavioral sciences. The social science courses may be integrated into a single sequence, or may be given in such fields as modern economics, experimental psychology, and political science. Since the social science departments at UCSD are now in process of formation, the exact nature of the course or courses cannot be set forth at this time.

Mathematics

Mathematics has for centuries held an important place in education, in the sciences as well as in the humanities. In recent times its contribution to our culture, to our scientific and technological achievements, has increased so rapidly, that it must now be regarded as the foundation of all scientific thinking and as a key to the understanding of a large part of our modern world.

It must, therefore, form an integral part of a curriculum in liberal education, and this will be accomplished by bringing the student in contact with a significant area of mathematics. The student should become acquainted not only with the rigor of the axiomatic method, but also with the substance of its concepts. Furthermore, he should gain the facility to apply mathematics in his studies of the physical, biological, and behavioral sciences.

The first course in mathematics presents an integrated sequence developing the fundamentals of analysis and linear algebra. These two areas are intimately related in that a basic process of the calculus is the approximation of a function by a linear transformation. This one year course meets the common requirement in mathematics for all freshmen.

In the lower and upper division emphasis will be placed on stimulating the student to do independent work by means of honor classes and reading courses and to allow him to progress at the limit of his ability.

Prerequisites:

Three and one-half years of high school mathematics including a minimum of two years of algebra, one year of plane and solid geometry, and one-half year of trigonometry. A student without sufficient preparation in mathematics will be offered appropriate courses to prepare him to enter the required mathematics sequence.

Physical and Biological Sciences

The science sequence presents the fundamental concepts of modern physical science and biology. The sequence both serves as background to further study in these disciplines and provides an understanding and appreciation of the current developments in these fields for the non-scientist. The program will be designed both in its breadth and in its emphasis to constitute an appropriate terminal course for those students who will continue their studies outside the sciences.

The common requirement is met by a three-semester sequence starting in the spring semester of the first year and consisting of four units the first semester, five units the second semester, and four units the third semester. Laboratory instruction is offered during the second semester of the sequence. The first semester concentrates on the scales and scopes of natural phenomena and on mechanics and electricity and magnetism; and the second on thermodynamics, radiation and matter, atomic and nuclear structure, and the elements of chemical bonding. The third

semester covers the biology of the cell in terms of its chemical, anatomical, physiological, and hereditary characteristics. With examples chosen from a wide variety of plant and animal sources, emphasis is placed on the characteristics common to all living cells and the points of divergence in structure and function.

Prerequisites:

Mathematics preparation at the level of Mathematics 1A, Analytical Geometry and Calculus, is required for the entire sequence. Preparation to the level of Mathematics 1B should be achieved by the end of the first semester of the sequence.

Language

To be admitted to upper division standing, all students (including transfer students) must demonstrate ability to hold ordinary conversations and to comprehend ordinary written material in a major modern language (for 1965-66, French, German, Russian, or Spanish). The student will have the opportunity to take the examination which tests this ability upon entrance to the University and at periodic intervals after entrance. A student who passes the qualifying examination will be granted up to 10 semester-hours (or 15 quarter-hours) of credit towards graduation, if he has not already earned credit by taking the language courses. By passing the language examination early, the especially gifted, industrious, or previously well-trained student may thus significantly advance his progress toward graduation or toward early specialization.

The normal preparation for the language examination will be the special language courses in the student's freshman year. It is expected that a majority of students will require about a year of course work to prepare for the examination, but some students will take less time and some more, because of differences in ability, industry, and previous language work in high school, on other campuses, or in extracurricular activities.

To assist the student in attaining the required language proficiency, The First College offers four kinds of aid in its courses:

1) Self-instructional materials and equipment which the student can use to advance his proficiency at his own optimum speed.
2) A one-year program of small tutorial classes, conducted by native-speaking tutors. A student's assignment to a new tutorial class will be a measure of his increased proficiency; the classes will be recomposed each week to maintain homogeneity of class membership, permitting each class to be conducted at the highest level possible for each of its members.
3) Instruction by linguistic scientists about language and the learning of languages. This instruction is intended to serve the broad aims of general education as well as to assist the student in his own language study.
4) An extracurricular program (e.g., foreign movies, "language tables" for meals, language clubs) offering informal opportunities for the student to practice using the language he is studying.

In summary, the lower division program preparing a student for the common requirements is:

FRESHMAN YEAR

Fall Semester:		Semester-hours[1]
Humanities 1	The Contemporary World	3 units
Language[2]	Language Tutorial	6 units
Mathematics 1A	Calculus and Analytic Geometry	6 units
		15 units

Spring Semester:		
Humanities 2	The Ancient World	3 units
Language 2[2]	Language Tutorial	4 units
Mathematics 1B	Calculus and Analytic Geometry	4 units
Physical Science 1	Classical Physics	4 units
		15 units

SOPHOMORE YEAR

Fall Semester:		
Humanities 3	The Middle Ages and Renaissance	3 units
Physical Science 2	Quantum Physics and Chemistry	5 units
Social Science[3]		3 units
		11 units[4]

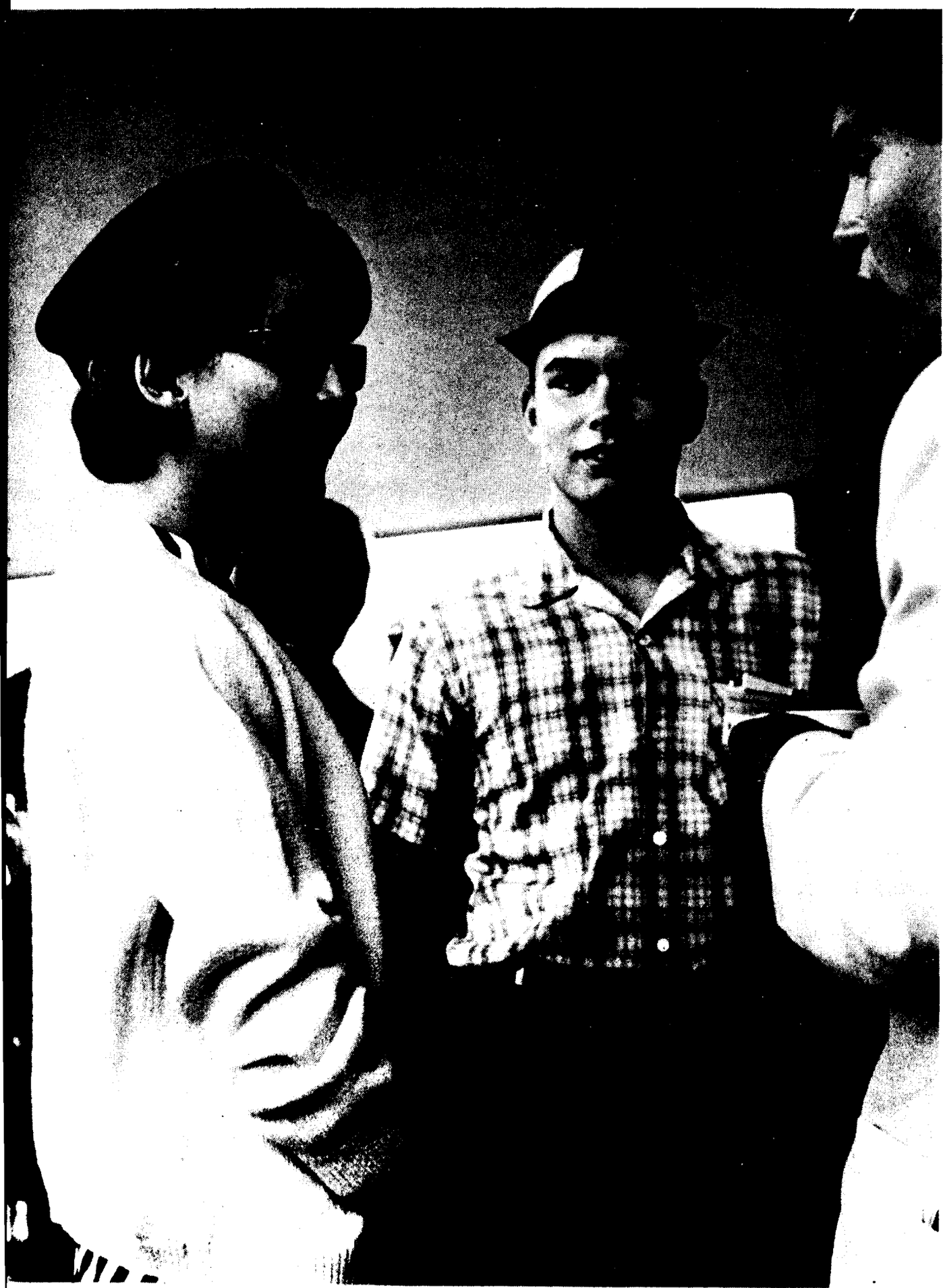
Spring Semester:		
Biology 1	Cellular Biology	4 units
Humanities 4	The Modern World	3 units
Social Science[3]		3 units
		10 units[4]

[1]The San Diego campus will change to the quarter system in September, 1965.
[2]May be selected from French, German, Russian or Spanish.
[3]Course will be specified later.
[4]Students will normally take elective courses to carry a total of 14 to 16 units each semester.

THE UPPER DIVISION PROGRAM

MAJOR PROGRAMS

A student meeting the common requirements of the lower division will be admitted to the upper division. Transfer students meeting the general University requirements will also be admitted to the upper division. Upon admission, the student will select a major field of concentration. On the average, a student will be able to complete the requirements for the bachelor's degree with two years of upper division work. All students will also select, with the consent of a faculty advisor, courses outside the major intended to provide an area of coordinated study paralleling the major field. The nature of the elective program will vary for different students, particularly for the transfer students who have not received the equivalent of the lower division program offered at the San Diego campus. The program given on the San Diego campus in 1965 will lead to undergraduate degrees preparing students for a variety of careers and qualifying them for admission to professional schools, such as dentistry, law, and medicine, as well as admission to the nation's major graduate schools. Although the number of fields offered is limited,



the programs in each field will be complete in themselves. Additional curricula will be added each year to lead rapidly to the full offerings of a major university.

Upper division courses will be offered in the following majors during the 1965-66 school year:

Aerospace and Mechanical Engineering Sciences
Biology
Chemistry
Earth Sciences
Mathematics
Physics

In addition to the majors listed above, upper division instruction in the following majors will probably be offered within the next four years:

Anthropology
Applied Electronics
Biochemistry
Economics
History
Literature (American, English, French, German, Spanish)
Linguistics
Philosophy
Political Science
Psychology

EXPLANATION OF MAJORS OFFERED FALL QUARTER 1965

Following is a description of the upper division majors which will be offered Fall Quarter, 1965.

Aerospace-Mechanical Engineering Sciences

The undergraduate program in the Engineering Sciences leads to the degree of Bachelor of Arts (Applied Science) and presents the scientific basis of modern aerospace and mechanical engineering. Two sequences of courses with slightly different emphasis are available: An applied mechanics program prepares the student for professional, graduate studies in aerospace and mechanical engineering while an electromechanics program does the same in those areas of electrical engineering peripheral to these fields, namely guidance, control, and energy conversion. The required departmental courses in the junior year are common for the two sequences so that the student need make his decision concerning which sequence to follow only at the beginning of his senior year. All students take a series of courses in thermodynamics, fluid mechanics and dynamic systems including the theory of circuits, of vibrations and of controls. Students electing the applied mechanics sequence will study solid mechanics and transport processes in their senior year while those electing the electromechanics sequence will study electromagnetic theory and electronics with special reference to guidance, control and energy conversion. Electives in the humanities and sciences leading to an integrated program of study will be chosen in consultation with the departmental advisors.

The upper division courses in Aerospace-Mechanical Engineering Sciences will be described in terms of quarter-hours in the *Undergraduate Bulletin* for 1965-66, which will be published about January 1, 1965.

Biology

The undergraduate program leading to a Bachelor of Arts in biology at UCSD will represent somewhat of a departure from that traditionally offered at many institutions. This departure is a reflection of the striking advances made in biology during the past few years and the prospects of revolutionary developments in the future. New and powerful methods, employing all the allied resources of chemistry, physics, and mathematics, are now being used in a successful experimental attack on questions in biology that have defied answer for generations. Of equal importance, the new information has enabled biologists to reevaluate facts already known and to reformulate and strengthen theories already established.

To train the student in contemporary biology and enable him to take his place in future developments, regardless of his chosen field of specialization, the following program will be offered. All majors in biology, whether they go on to graduate study, medicine, teaching, agriculture, etc., will take the same basic sequence of courses. Beginning in the sophomore year and extending over a period of two and one-half years, the sequence will consist of cell biology, comparative, structural and functional biology exemplified by organisms ranging from viruses to man, and ecology and evolution. In the freshman year, the student will begin his training in physics, chemistry, and mathematics. Selective courses in these areas will continue to be taken throughout his undergraduate career. In the senior year, specialization can begin with the election of additional studies in particular areas, such as botany, zoology, genetics, physiology, biological oceanography, and marine biology.

The upper division courses in Biology will be described in terms of quarter-hours in the *Undergraduate Bulletin* for 1965-66, which will be published about January 1, 1965.

Chemistry

Upper division majors in chemistry will take courses that include physical chemistry, organic chemistry, and inorganic chemistry. There will be a special intensive course on the laboratory aspects of the science.

In addition, there will be room in the student's program for pursuing other objectives such as work in related sciences, advanced study in humanities, social sciences, and the arts, participation in advanced chemistry (graduate) courses, and research.

In addition to preparing students for careers in chemistry, both fundamental and applied, the undergraduate major is thought of as providing the basis for advanced work in chemistry and other sciences, such as biology, the earth sciences, and oceanography. The departmental boundaries at UCSD are not intended as barriers, and joint programs of study can be tailored to the individual student's needs.

The upper division courses in Chemistry will be described in terms of quarter-hours in the *Undergraduate Bulletin* for 1965-66 which will be published about January 1, 1965.

Earth Sciences

The upper division curriculum in Earth Sciences attempts to provide students with a broad general knowledge in earth, marine, atmospheric, and planetary sciences. The concepts and techniques used in observational sciences today demand a strong basic background in the natural sciences and mathematics and hence emphasis is placed upon a balanced program in these subjects, compatible with the aspirations of the student.

Upper division courses provide an introduction to the features of the earth and techniques of study. Special emphasis is placed on the origin, composition and

alteration of the materials composing the earth. Courses in geological mapping, and field trips on land and sea confront the student with the earth itself. Students will be encouraged to devote an appropriate amount of time in the senior year to an area of specialization which may involve additional studies in the Departments of Oceanography, Biology and Marine Biology, as well as advanced courses in the Departments of Chemistry, Physics and Mathematics.

The upper division courses in Earth Sciences will be described in terms of quarter-hours in the *Undergraduate Bulletin* for 1965-66 which will be published about January 1, 1965.

Mathematics

The upper division curriculum in mathematics will provide a program for mathematics majors, as well as courses for students who will use mathematics as a tool in the physical and behavioral sciences. Students majoring in mathematics should take some work in a field outside of mathematics in which mathematical methods play a basic role. They will also be required to continue the study of a foreign language and will take electives in the humanities and social sciences.

Mathematics majors are required to take a year of analysis beyond the lower division courses, and also a one year course in algebra. In addition, they must take a number of other courses in pure or applied mathematics, depending on their interests, to complete the requirements for the major.

It is expected that most majors in mathematics will go on to graduate work. Such students may elect advanced courses which will prepare them more rapidly for independent research.

The department plans to offer work in set theory, geometry, topology, real analysis, complex analysis, differentiable manifolds, algebra, differential equations, logic, probability, mathematical statistics, applied mathematics, numerical analysis, and automatic computation.

The upper division courses in mathematics will be described in terms of quarter-hours in the *Undergraduate Bulletin* for 1965-66 which will be published about January 1, 1965.

Physics

With the physical science course of the lower division as a background, physics majors will pursue the systematic study of physics with special emphasis on modern topics, including their technological implications. Instruction in the humanities and social sciences will continue in the upper division. Course credits in contiguous fields such as mathematics, are required in the junior year and are offered on an optional basis in the senior year.

In the junior year, physics majors will take courses in electricity and magnetism, atomic and nuclear physics, and laboratory work in atomic and nuclear physics. They will also elect courses in mathematics, humanities and social sciences, and continue training in a language.

In the senior year, students will concentrate on advanced courses in analytical mechanics, statistical physics, thermodynamics. Physics majors will also be encouraged to continue diversification of their training by selection of courses from optional topics such as mathematics, solid state physics, elementary particle physics and biology.

The upper division courses in physics will be described in terms of quarter-hours in the 1965-66 *Undergraduate Bulletin* which will be published about January 1, 1965.

ADMISSION TO THE UCSD UPPER DIVISION PROGRAM

General University of California Admission Requirements to Advanced Standing

Students applying for admission as juniors in the Fall Quarter, 1965 must:

1. Present a minimum of 56 semester-hours (or equivalent quarter-hours) of acceptable transfer credit. (The University grants unit credit for courses completed at other regionally accredited colleges and universities which are equivalent to, or nearly equivalent to, courses it offers to its own students.) The University will also accept college level courses that are not like University courses, but that are appropriate in purpose, scope, and depth to a University degree. All courses that are accepted by the Admissions Office under University-wide policy will carry credit toward a University degree. The application of these courses for fulfilling specific requirements for graduation will be determined by the administrative head of The First College.

2. Be eligible for admission to Advanced Standing at the University. (Requirements vary in accordance with the high school record of the applicant. Consult the University of California's *Undergraduate Admissions Circular* which may be obtained upon request from the Office of Admissions.)

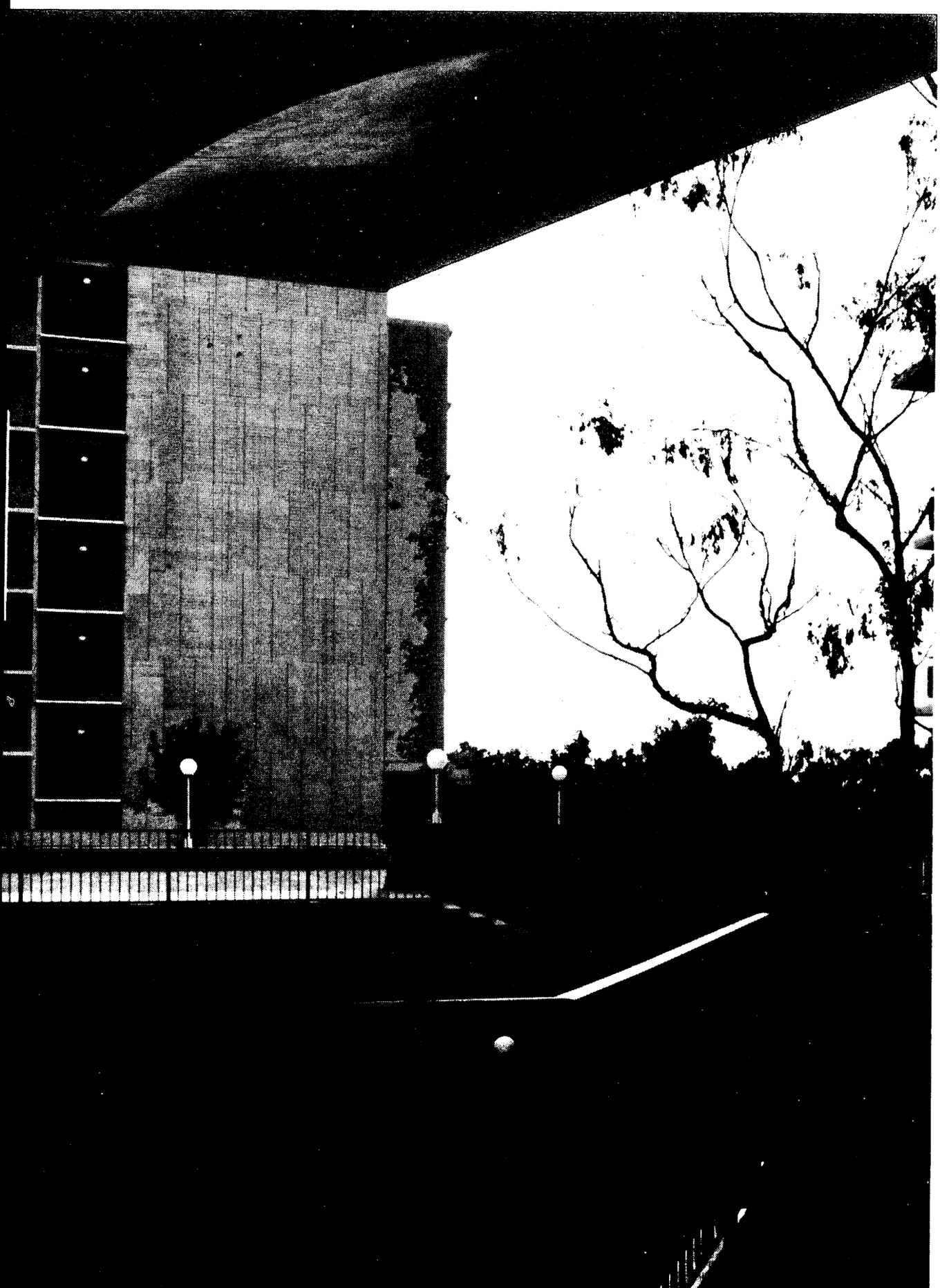
Recommended UCSD Lower Division Preparation for Upper Division Courses in Selected Majors, Fall Quarter, 1965

	MAJORS					
	Biology	*Aerospace-Mech. Engr. Sciences*	*Chemistry*	*Earth Sciences*	*Mathe-matics*	*Physics*
Lower Division Requirements	*Sem-Hrs*	*Sem-Hrs*	*Sem-Hrs*	*Sem-Hrs*	*Sem-Hrs*	*Sem-Hrs*
Humanities						
*Hum. 1 The Mod. World	3	3	3	3	3	3
*Hum. 2	3	3	3	3	3	3
*Hum. 3	3	3	3	3	3	3
*Hum. 4	3	3	3	3	3	3
TOTAL Humanities	12	12	12	12	12	12
Note: Transfer students may select courses from literature, philosophy, history of western thought and culture, and history of the arts to approximate this sequence.						
Language (Fr., Ger., Rus. or Span.)						
*Lang. 1 Lang. Tutorial	6	6	6	6	6	6
*Lang. 2 Lang. Tutorial	4	4	4	4	4	4
TOTAL Language	10	10	10	10	10	10
Note: All students (including transfer students) must demonstrate ability to hold ordinary conversations and to comprehend ordinary written material in a major modern language.						

*Courses marked with an asterisk are common lower division requirements.

Lower Division Requirements	MAJORS					
	Biology	*Aerospace-Mech. Engr. Sciences*	*Chemistry*	*Earth Sciences*	*Mathe-matics*	*Physics*
	Sem-Hrs	*Sem-Hrs*	*Sem-Hrs*	*Sem-Hrs*	*Sem-Hrs*	*Sem-Hrs*
Mathematics						
*Math. 1A Calc. & Anal. Geom.	6	6	6	6	6	6
*Math. 1B Calc. & Anal. Geom.	4	4	4	4	4	4
Math. 2 Calc. & Anal. Geom.	3	3	3	3	3	3
Math. 3 Diff. Equations	3	3	3	3	3	3
Math 4 Linear Algebra or Math. 5 Probability					3	
TOTAL Mathematics	16	16	16	16	19	16
Note: Transfer students should complete mathematics courses at other institutions which are substantially equivalent to the required UCSD courses.						
Social Science						
*(To be Specified:) Total	6	6	6	6	6	6
Econ. Hist. Pol. Sci. Psych. Soc. etc. — 6 sem-hrs						
Note: Transfer students may select courses from anthropology, economics, geography, history (in addition to any units applied on the Humanities sequence), linguistics, political science, psychology and sociology to meet the common social science requirement.						
Science						
*Biol. 1 Cellular Biol.	4	4	4	4	4	4
Note: Advanced standing credit in Biology and Zoology usually will not satisfy this requirement, and therefore most transfer students will be required to take Biology 1 (Cellular Biology) at UCSD. However, a course which is based on mathematics and includes the elements of differential and integral calculus and a physical science, and thus is substantially equivalent to that offered by UCSD, may be applied.						
*Phy. Sc. 1 Class. Physc.	4	4	4	4	4	4
*Phy. Sc. 2 Quant. Physc. & Chem.	5	5	5	5	5	5
Phy. Sc. 3 Mdn. Struct. & Phys. Chem.	4	4	4	4		4
TOTAL Science	17	17	17	17	13	17
TOTAL LOWER DIV.	61	61	61	61	60	61

*Courses marked with an asterisk are common lower division requirements.



Note: Courses in Chemistry and Physics which are substantially equivalent to Physical Science 1 and 2 are strongly preferred. However, a minimum of 9 semester-hours of a laboratory science in *one* Physical Science at a level which applies the first year of analytical geometry and calculus containing the elements of differential and integral calculus will fulfill the common physical science requirement. Transfer students expecting to major in science should take a combination of courses which are substantially equivalent to Physical Science 1, 2 and 3.

TRANSFER STUDENTS

Junior College Transfers and Other Transfers

The University grants unit credit for courses appropriate to the curriculum in the University that have been completed in other regionally accredited colleges, junior colleges and universities.

As an integral part of the system of public education of California, the University accepts, usually at full unit value, approved transfer courses completed with satisfactory grades in the public junior colleges of the State.

Courses which are substantially equivalent to the required lower division courses may be accepted at the San Diego campus toward meeting the lower division requirements. In cases where transfer work is not substantially equivalent to the required lower division courses, elective courses will be taken on the San Diego campus to fulfill any deficiencies which may exist.

No more than 70 units will be granted toward a degree for courses completed in a junior college.

Students who have completed courses which are substantially equivalent to the recommended UCSD lower division preparation will be admitted in advanced standing at the junior level Fall Quarter, 1965. The following UCSD transfer policy statement is a summary of the level of competence that students will be expected to meet upon completing the lower division program at UCSD or another lower division program elsewhere prior to entering the upper division. In addition to the common lower division requirements, each UCSD major requires special lower division preparation as prerequisites for upper division courses in the major.

TRANSFER POLICY

*Common Lower Division Requirements**

A student transferring to UCSD will be given the same opportunity to demonstrate advanced levels of proficiency as is given to students who begin here. A student with strong previous training in some area will be given credit towards graduation that corresponds to the level he has reached; if he lacks training in another area, he will be placed in courses that will help him arrive at the minimal acceptable level for that area.

In principle, transfer students will, like UCSD freshmen and sophomores, be required to demonstrate their proficiency by examinations in fields included in the UCSD lower division curriculum. UCSD departments, however, will have the option of accepting the transfer student's freshman and sophomore course work as demonstrating his having achieved a satisfactory level of proficiency in the fields concerned. In any case, the student's work will be evaluated and he will be required to have satisfied by the time of graduation the same minimal breadth requirements

*Interim transfer policy for common lower division requirements as of July 15, 1964.

as those to which UCSD lower division students are held. Course work to satisfy those breadth requirements may be counted as part of the transfer student's upper-division electives. (See this section, final paragraph.)

Since in his previous work a transfer student will presumably have balanced any weakness in one area with strength in another, The First College system of recognizing strengths as well as weaknesses makes it possible for a transfer student to graduate in the same amount of time as a student who happens to have done all his work at UCSD – for the average student, after a total of four years of college work.

The First College will examine students in six basic areas and will expect its own lower division students to reach certain minimal levels of proficiency in each one:

1. In the humanities a student will be expected to write competent interpretations of literary and philosophical documents, demonstrating a reasonable ability to place these documents in their historical context and to appraise their meaning and significance. (At other institutions, courses in English Composition, World Literature and The History of Western Thought and Culture may be expected to bring the student to the expected level of competence.)

2. In the social sciences a student will be expected to demonstrate either a general familiarity with the kinds of complex problems treated in anthropology, economics, linguistics, political science, psychology and sociology (as he might get in a survey course covering all the social sciences), or a fundamental sophistication in any two of the social sciences (as he might get in introductory courses in those subjects).

3. A student will be expected to be able to carry on ordinary conversation in one foreign language and to read ordinary material (e.g., non-technical magazines, newspapers) written in that language.

4. A student will be expected to have an understanding of the fundamental concepts of mathematics, as preparation for work in the humanities and the physical, social, and biological sciences. (At other institutions, a one-year college course in mathematics that includes the calculus might be expected to bring students to this level.)

5. A student will be expected to have a qualitative understanding of our present view of the material world and also a quantitative understanding of the basic aspects of the physical sciences. (The expected level of proficiency might be attained in a reasonably quantitative year-and-a-half science course that includes classical and modern physics and modern chemistry.)

6. In biology a student will be expected to understand the elements of the chemistry of living matter. (Because the proficiency in areas 4 and 5 is prerequisite for modern biological study, a transfer student would not ordinarily be expected to have reached the required level in biology before entrance to UCSD.)

Students planning to transfer to UCSD may postpone part or all of their work in lower division breadth requirements until after they have transferred. In such cases, satisfaction of lower division breadth requirements at UCSD would be counted as part or all of the required upper division election of a complex of interrelated courses in an area non-contiguous to that of the major.

UNIVERSITY OF CALIFORNIA/SAN DIEGO

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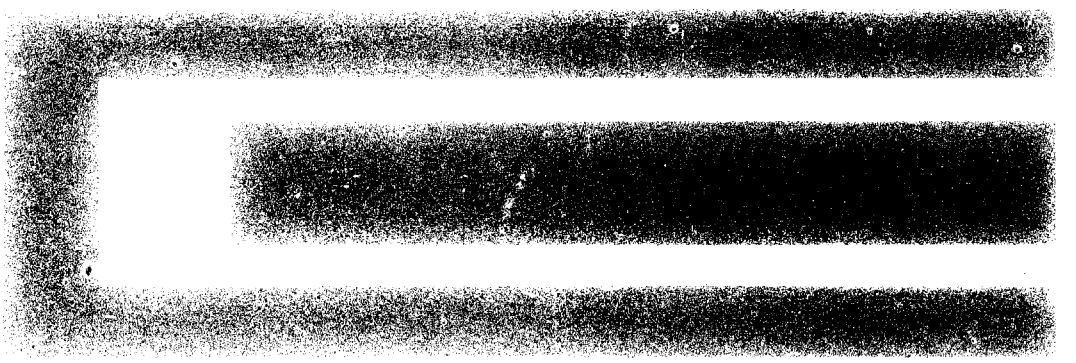
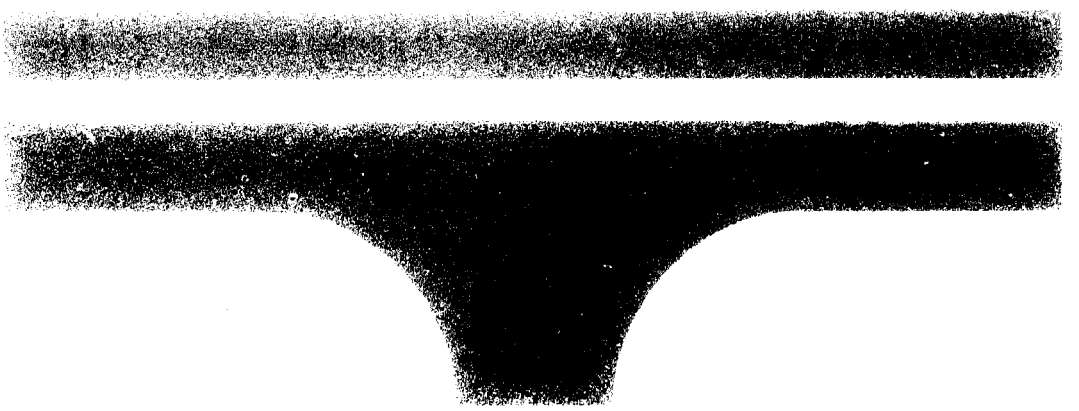
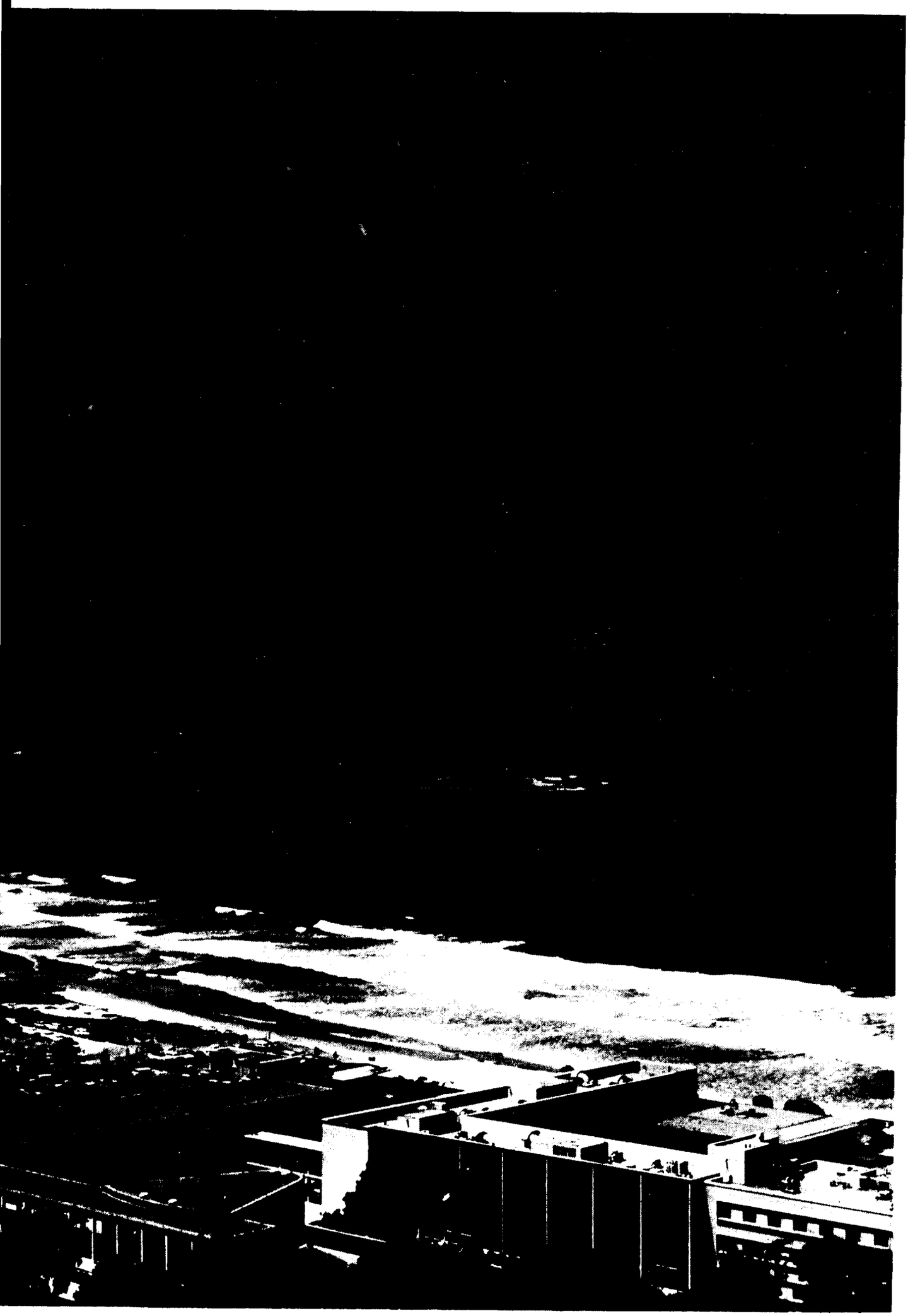


UNDERGRADUATE BULLETIN

REVELLE COLLEGE



Fall, Winter, and Spring Quarters, 1965-66



All announcements herein are subject to change without prior notice.

UNIVERSITY OF CALIFORNIA/SAN DIEGO

UNDERGRADUATE BULLETIN

REVELLE COLLEGE

Fall, Winter, and Spring Quarters, 1965-66

All graduation requirements described in this *Bulletin* are tentative and are subject to approval by the Assembly of the Academic Senate of the University of California.

All courses and programs described in this *Bulletin* are subject to approval by the San Diego Division of the Academic Senate.

UNDERGRADUATE ACADEMIC CALENDAR
1965-1966

FALL QUARTER

Fall quarter begins	*Sept. 27*	Monday
Instruction begins	*Oct. 4*	Monday
*Thanksgiving recess	*Nov. 25-26*	Thursday-Friday
Instruction ends	*Dec. 11*	Saturday
Fall quarter ends	*Dec. 18*	Saturday
*Christmas holiday	*Dec. 24*	Friday
*New Year's holiday	*Dec. 31*	Friday

WINTER QUARTER

Winter quarter begins	*Jan. 3*	Monday
Instruction begins	*Jan. 10*	Monday
*Washington's Birthday	*Feb. 22*	Tuesday
Instruction ends	*March 19*	Saturday
Winter quarter ends	*March 26*	Saturday

SPRING QUARTER

Spring quarter begins	*April 1*	Friday
Instruction begins	*April 7*	Thursday
*Good Friday	*April 8*	Friday
*Memorial Day	*May 30*	Monday
Instruction ends	*June 15*	Wednesday
Spring quarter ends	*June 22*	Wednesday

*Academic and administrative holiday.

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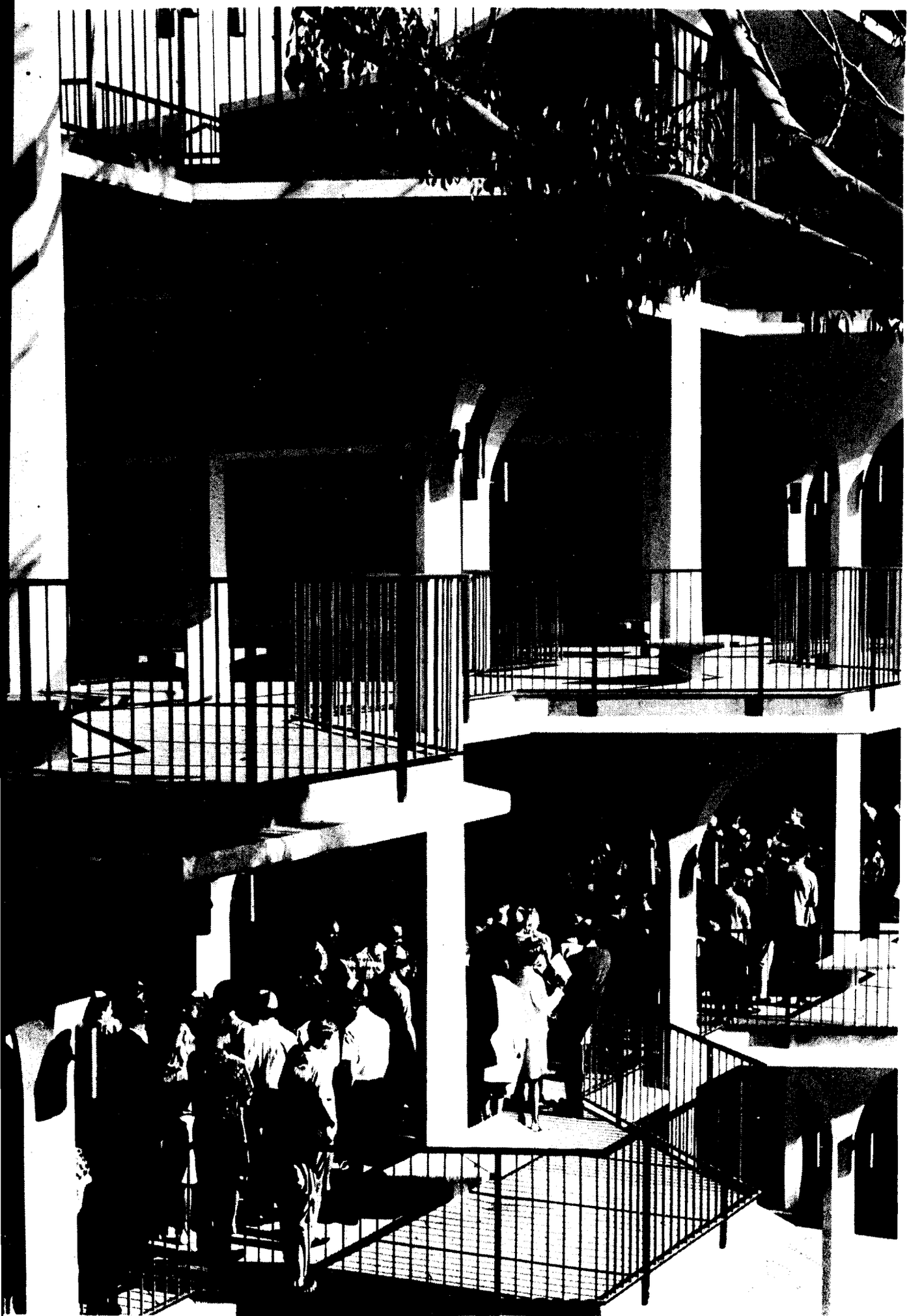


THE UNIVERSITY OF CALIFORNIA

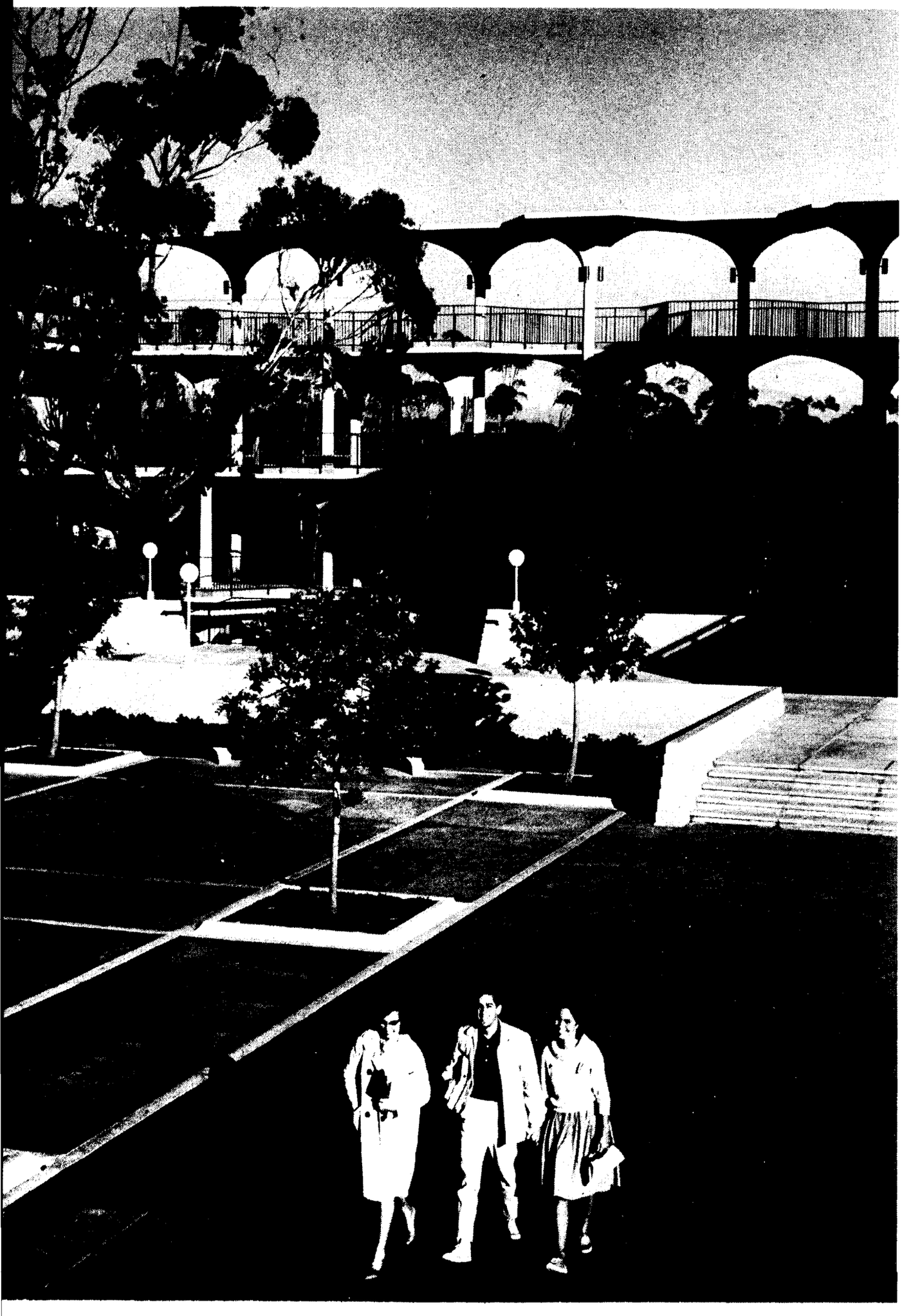
The University of California was founded nearly a century ago – in 1868 – by act of the State Legislature. It is a unique institution made up of nine campuses strategically located throughout the state. The first of these campuses to be established was that at Berkeley, and during the years the others have followed: at Los Angeles, Davis, San Francisco, Santa Barbara, Riverside and, most recently, San Diego. In addition new campuses are now being developed at Irvine and Santa Cruz.

Any qualified student, without distinction as to race, creed or color, may obtain a college education at the University of California. Instruction in the arts and sciences as well as fundamental training for many of the professions is available to him. At present, there is a choice of some two hundred curricula and majors that lead to degrees, certificates or credentials. Each year approximately eight thousand students earn degrees at the bachelor or first professional level and another three thousand earn advanced degrees.

The University presently operates on the semester system with the exception of the three new campuses – San Diego, Irvine and Santa Cruz – which will operate on the quarter system beginning in the fall of 1965. The other campuses of the University will operate on the quarter system beginning in the fall of 1966. Through the University Education Abroad program, undergraduates also have an opportunity for study in universities overseas. And in addition to the regular academic offerings on the various campuses, the University conducts extensive adult education programs (University Extension) and agricultural services (Agricultural Extension) throughout the state.

The organization and government of the University is entrusted to The Regents of the University of California. This Board is composed of twenty-four members, sixteen of whom are appointed by the Governor and eight of whom are *ex officio* members by reason of the public offices they hold. The executive head of the statewide University, in all its departments and on all its campuses, is the President. He and his staff direct the development of major policy for the entire institution. The Board of Regents appoints the President and he is directly responsible to them. On each campus the chief administrative officer is the Chancellor, also appointed by The Regents. He and his staff are in charge of all the activities of their particular campus.

Subject to the approval of the Board of Regents, the conditions for the admission of students and the granting of degrees and certificates are determined by the Academic Senate. The Senate, which is composed of the faculty and certain administrative officers, also authorizes and supervises all courses of instruction in the academic and professional schools and colleges of the University.



THE SAN DIEGO CAMPUS

THE SETTING

The University of California, San Diego, is situated near the northern limits of the city of San Diego. Occupying more than one thousand acres, the campus site spreads from the sea front, where the Scripps Institution of Oceanography is located, across a large portion of the adjacent Torrey Pines Mesa high above the Pacific Ocean. Much of the land is wooded; to the east and north lie mountains, to the west the sea.

San Diego is California's oldest and third largest city, with a metropolitan-area population of slightly more than one million. It has much to offer the UCSD student in the way of cultural and recreational opportunity.

Within the city are scores of public beaches, including those of Mission Bay, an area that is being developed into one of the finest aquatic centers of the world. In the nearby mountains there is skiing in the winter, hiking and camping the year around. Just beyond the mountains the vast and beautiful desert stretches to the Colorado River.

In downtown San Diego is Balboa Park, one of the largest in the country and home of the world-famous San Diego Zoo. Fine arts, natural history and other museums are located in this park. And here, also, stands the Old Globe Theatre, a replica of an Elizabethan playhouse, where community theater is offered throughout the year and the well-known National Shakespeare Festival is held in July and August.

The city's attractions are many and varied. Theater, museums, music, art, sports – all are available in San Diego.

EARLY DAYS

Although undergraduates are new to UCSD, the campus originated in the closing years of the nineteenth century when Berkeley zoologists selected La Jolla as the site for a marine station on the Pacific. This project, which eventually became the Scripps Institution of Oceanography, was made a part of the University of California in 1912. When it was decided in the late fifties to establish a general campus at San Diego, the Scripps Institution – with its distinguished though small staff of scientists – formed the nucleus for the new enterprise.

At first, only graduate studies and degrees in the physical sciences were offered. In the fall of 1964 the campus opened for undergraduates offering a basic lower division curriculum preparing students for upper division majors in the humanities, the social sciences, the biological sciences, the physical sciences and mathematics. Undergraduate instruction will be offered at all class levels in the fall of 1966 with a consequential broadening of the range of courses offered.

The San Diego campus is expected to reach maximum growth by 1995, with a student enrollment of 27,500. By that time twelve interrelated colleges will have been established, each of which will accommodate approximately 2,300 students and provide a wide variety of both undergraduate and graduate programs. The idea behind this plan is to give students and faculty the opportunity of working in desirably small academic units while at the same time enjoying the advantages of a major university.

REVELLE COLLEGE

Of the twelve colleges, only Revelle College is currently in operation. The Second College is scheduled to admit its initial class in 1967.

Revelle College was named in honor of Dr. Roger Revelle, former University-wide Dean of Research, and for many years Director of the University's Scripps Institution of Oceanography. Dr. Revelle received his Ph.D. in Oceanography from the University of California in 1936 and joined Scripps as Professor of Oceanography in 1948. He was named Director of Scripps in 1950 and University Dean of Research in 1962. He resigned his post of Director and as Dean in September 1964. During his long association with Scripps he saw it develop into the largest oceanographic institution in the world and was the first alumnus to become Director of the Institution.

Revelle College in 1960 began a graduate program in the physical sciences. From that beginning, it has rapidly been developing its humanities and social science programs. Today, research ranges from the problems of cosmochemistry to studies of 17th century philosophy. The teaching program reflects a broad spectrum of learning – with offerings in aerospace and mechanical engineering sciences, biology, chemistry, earth sciences, economics, languages, literature, mathematics, philosophy, physics and psychology. Other programs, including anthropology, political science and history, are in the process of development.

It was of Revelle College that John Walsh, a nationally known writer of science, wrote recently in *Science:* "The idealism, self-confidence, and academic daring in evidence at San Diego should make the University in the coming years one of the most interesting experiments in American higher education."

Scholars and researchers of international reputation have been attracted to the UCSD faculty, which now includes two Nobel laureates and thirteen members of the National Academy of Sciences. The University's graduate students are drawn from the upper ranks of the nation's finest colleges and universities and from institutions of comparable standing throughout the world. On the San Diego campus, undergraduates have an unusual opportunity for association with some of the great names in American education today.

THE SCRIPPS INSTITUTION OF OCEANOGRAPHY

The Scripps Institution of Oceanography was originally an independent biological research laboratory. When it became an integral part of the University of California in 1912, it was given the Scripps name in recognition of the support given by Miss Ellen Browning Scripps and Mr. E. W. Scripps. The scope of the Institution's scientific research has come to embrace physical, chemical, geological, and geophysical studies of the oceans as well as biological studies. It conducts continuing investigations of the topography and composition of the ocean bottom, of waves and currents, and of the flow of heat and interchange of matter between seawater and the ocean bottom or the atmosphere. Its research ships have extended the geographic scope from the Institution's beach and the adjacent coastal waters to all of the world's oceans.

The educational program at Scripps has kept pace with the research program. Instruction is on the graduate level only and only candidates for the Ph.D. are usually admitted. Although there is a rapid rate of increase, only a few hundred persons are currently active as marine scientists and a significant portion of these are Scripps graduates. Their studies are marked by a high degree of interdisciplinary and international collaboration. Many nationalities are represented among the staff and student body.

The Institution has eight oceanographic research vessels. Their cruises vary from local, limited-objective trips to far-reaching expeditions designed to gather a

variety of data on relatively unexplored tracks. In 1962 and 1963 two Scripps ships circumnavigated the globe in opposite directions and joined en route for seismic refraction studies of the earth's crust under the Indian Ocean. A third ship made a cruise around the world in 1964.

The academic departments within the Scripps Institution are the Department of Oceanography and the Department of Marine Biology. Some members of the Department of Earth Sciences are also associated with the Scripps Institution. The 30 professors are complemented by an academic staff of 90 research scientists, many of whom have a regularly scheduled part in the instructional program.

THE SCHOOL OF MEDICINE

The University of California, San Diego, is planning a new school of medicine that will enroll its first class in September, 1968. Plans call for a progressive increase to an entering class size of 96 students.

UCSD School of Medicine will offer a unique, experimental curriculum that will emphasize close affiliation with the general campus and maximum flexibility. The first year will be taught by faculty members from the graduate departments at UCSD with graduate students and medical students taking the same course in cell biology. Formal demonstration laboratories for first-year medical students will be replaced by rotation through various research laboratories similar to that given to first-year graduate students in biology. Opportunities in research will be enhanced by the uniquely integrated relationship with the faculty in the graduate departments of biology, chemistry, physics, mathematics, and psychology. At least 20 percent of the student's time will be free to pursue research or other elective activities.

The second-year curriculum will introduce the student to organ structure and function in health and disease and will also include an integrated course in the neurosciences, and courses in pathogenic microbiology, and pharmacology. During this year, students will be assigned to 16-man multidiscipline laboratories where they will be supervised by instructors from various departments of the School of Medicine.

During the third year, students will be introduced to the tools of clinical medicine and will pursue a core clinical curriculum at the three hospital facilities which will be operated by, or affiliated with, the School of Medicine. This will allow a fourth year which will be largely elective and which should allow a student to pursue his individual interests by taking medical or surgical clerkships, clinical or basic science electives, or continued research.

Selection Factors

Selection will be based on the applicant's scholastic record, letters of recommendation, performance on the Medical College Admission Test, and a personal interview.

A catalogue containing complete information on the School of Medicine will be published at a future date.

Programs for Prospective Medical Students

UCSD offers no special premedical program. A student considering medicine as a career may choose any program leading to the Bachelor of Arts degree, provided that he elects those additional courses which the medical schools of his choice require for admission. This is complicated by the fact that different medical schools have somewhat different admission requirements. All medical schools require courses in general physics, inorganic chemistry, mathematics, the humanities, and the social and behavioral sciences, which should be met by the lower division common curriculum of Revelle College. Most medical schools require in addi-

tion: a) More chemistry, including qualitative analysis (equivalent to Physical Science 4 and 4L) and organic chemistry (Chemistry 141, 142, and 143). Those schools that further require quantitative analysis may have this requirement met with experimental chemistry (Chemistry 5 or 5L). b) More biology, for which cell biology (Biology 100 and 101) should be adequate. Those schools that further require comparative anatomy and embryology should accept the courses in the biology of higher organisms (Biology 110 and 111). The program of a major in biology at UCSD should satisfy the admission requirements of almost all medical schools.

GRADUATE DIVISION

The Graduate Division administers programs of study leading to the degrees of Master of Arts, Master of Science, Doctor of Philosophy and such other graduate degrees as from time to time may be approved. Graduate programs are offered in Revelle College and Scripps Institution of Oceanography.

GRADUATE PROGRAMS

REVELLE COLLEGE

The present graduate programs offered in the Revelle College leading to the doctorate are:

Biology
Chemistry
Earth Sciences
Engineering Sciences
Mathematics
Philosophy
Physics

In addition, graduate instruction is offered in economics, linguistics and English and Spanish literature in anticipation of doctoral programs in these fields. Doctoral programs in several additional departments in the humanities and social sciences are being initiated.

Information regarding admission to the graduate programs offered by the Revelle College is available from the Dean of Graduate Studies, University of California, San Diego. For additional information regarding the graduate programs, see the *Announcement of the Graduate Division* which is available from the Graduate Dean.

SCRIPPS INSTITUTION OF OCEANOGRAPHY

The graduate programs offered by the Scripps Institution of Oceanography are:

Marine Biology
Oceanography

Information regarding admission to the graduate programs in oceanography and marine biology is available from the Dean of Graduate Studies, University of California, San Diego. For additional information regarding the graduate programs, see the *Announcement of the Graduate Division* which is available from the Graduate Dean.

THE INSTITUTE OF GEOPHYSICS AND PLANETARY PHYSICS

The San Diego branch of the University-wide Institute of Geophysics was established in 1960. Present research activities emphasize the study of microseismic waves on land and on the sea bottom, normal modes of the earth, turbulence of the oceans and atmosphere, ocean waves and ocean tides, and ionospheric disturb-

ances of the electric field gradient.

The Institute does not grant degrees, but makes its facilities available to students from various departments who have chosen to write their dissertations on a problem of the earth. Members of the Institute staff now hold joint appointments with the Departments of Earth Sciences, Physics, Chemistry, and Oceanography.

THE INSTITUTE OF MARINE RESOURCES

This is a University-wide institute, devoted to fostering research and investigations into the resources of the sea. With its headquarters on the San Diego campus and a wide interest in the biological, geological, physical and socio-economic aspects of marine resources, its activities offer many opportunities to graduate students.

ASSOCIATED LABORATORIES

The headquarters laboratory of the U.S. Bureau of Commercial Fisheries, Biological Laboratory, and the Inter-American Tropical Tuna Commission is located on the San Diego campus.

These groups occupy a new laboratory recently built by the U.S. Bureau of Commercial Fisheries on the campus.

THE COMPUTER CENTER

The Computer Center operates a large computer system which is used by students and staff for instruction and research. Most students and staff do their own programming. Actual operation of the computer system is performed by a staff of professional computer operators. Programming consultants are available to answer questions on programming.

Non-credit programming courses are conducted frequently. Numerical analysis and programming courses are offered by the Mathematics Department.

The Computer Center is engaged in research involving numerical analysis, systems programming and information retrieval. A computation seminar is conducted regularly on computers, numerical analysis, and related subjects.

THE UNIVERSITY LIBRARY

The Library of the University of California, San Diego, consists of the General Collection, the Science and Engineering Library, the Scripps Institution of Oceanography Library, and the Biomedical Library. By the fall of 1965 the Library will contain 250,000 volumes and will receive 60,000 periodicals and other serial publications.

The General Collection will consist of a basic undergraduate library of 75,000 volumes and specialized graduate collections in most areas of the humanities and social sciences. The concentrations of books are in literature, philosophy, linguistics, and economics, and in Hispanic fields. A major portion of the Library's special collections of rare and valuable books, including a rapidly developing Baja California Collection, has been donated by the Friends of the UCSD Library.

The Science and Engineering Library contains strong collections in aeronautics, astrophysics, atomic energy, chemistry, electronics, engineering, instrumentation, mathematics, missiles research, physics, and space sciences.

The Biomedical Library has been established to serve the School of Medicine and the health-related sciences. More than 10,000 volumes per year are being added to this Library.

The Scripps Institution of Oceanography Library has outstanding collections in oceanography, marine biology, and underseas technology, and also specializes in geology, geophysics, and zoology publications.

THE UNDERGRADUATE EDUCATIONAL PROGRAM OF REVELLE COLLEGE

EDUCATIONAL PHILOSOPHY

The faculty of UCSD has been given a unique opportunity to shape an undergraduate curriculum that will, insofar as any educational program can, prepare its students for their lives as citizens of the modern world From the outset of planning the curriculum, the faculty has asked: What sort of knowledge must students master if they are to be liberally educated? In what areas? To what depth? How specialized must that education be in the undergraduate years? The educational philosophy of Revelle College has been developed in answer to such fundamental questions. Its undergraduate program is based on the principle that, before being granted a Bachelor of Arts degree, every student must have attained:

1. An acceptable level of general education in mathematics, foreign language, the physical, biological, and social sciences, the fine arts and the humanities.
2. Preprofessional competence in one academic discipline.
3. A thorough understanding of an academic area outside his major field.

As other colleges are created at UCSD, there will be other answers. But it is most likely that they will differ more in form than in substance. Meantime, it should be noted that our answer derives not only from the faculty's study of the capacities, potentialities, and needs of the students of Revelle College, but from study of the capacities, potentialities, and needs of the College's staff and its facilities.

A uniform freshman-sophomore curriculum has been established so that the student can acquire an understanding of the major ideas and disciplines of our culture. If he is to be prepared to be a citizen of the world, the student must understand something of the fundamental concerns, methods, and powers of the humanities and the arts, the social and behavioral sciences, the physical and biological sciences, and the applied sciences.

The lower division curriculum assumes that an undergraduate should not settle firmly upon his major field until he has had a chance to learn something about all the fields that are open to him. His general education must, then, be thorough enough for him to see the possibilities of those fields. Early in his career, he should know, as it were, three languages: his own, a foreign language, and the worldwide language of mathematics. He will come the better to know his own language through his work in a two-year humanities sequence which is an introduction to literary, philosophical, and historical study – and which calls for the regular writing of essays, each to be gone over tutorially in a one-hour session with his teacher. He will study a foreign language as a spoken, vital means of communication to be used day-to-day; studying that language, he will come to know something of the general nature of language itself. And he will study mathematics at once as part of general education (the mathematical mode of analysis and understanding – and its power and beauty) and as an introduction to work in the physical and biological sciences, which will follow in sequence from the work in mathematics and introduce him to the substance and methods of modern science. Finally, he will, as a sophomore, study the social and behavioral sciences – sequentially deriving from what he has learned of mathematics and the humanities. He will also have some elective time in which he can take courses in disciplines that he would like further to explore. Once he has completed this program – and he can proceed at his own particular pace, if he wishes – he will be ready for the relatively more specialized work of the upper division. Through such a curriculum of general edu-

cation, Revelle College faculty believes, the student will develop that capacity to understand and appreciate, which is the mark of the good, responsible citizen of the world.

The student's general education will not, however, stop at the end of the sophomore year; every upper division student will be required to do a substantial fraction of his course work in an area of learning completely outside his major field. He will thus continue to study in one of the areas in which, as a freshman and sophomore, he has become particularly interested. Moreover, the courses he elects will have to compose an integrally related sequence – so that he will carry away with his B.A. not only his major preprofessional competence and his earlier general education, but also an acquaintance with a body of knowledge developed enough that he can continue informal study of it in adult life. A major in one of the literatures, for example, might take a complex of courses in the behavior of groups or in the process of learning, or in mathematics, or in the biological sciences. And the major in chemistry might take courses in the Renaissance (history, literature, art, philosophy) or in linguistics and related psychological problems. The choice of minor concentrations that Revelle College can offer is sufficiently wide to give adequate breadth and depth in continuing general education. For general education is effective only if it is continuing – indeed, only if it encourages continuance after the student's college years.

THE LOWER DIVISION PROGRAM

UCSD students are required to demonstrate an acceptable level of basic knowledge in the humanities, social sciences, language, mathematics, and the physical and biological sciences before choosing a major academic field for specialization during the junior and senior years. Many students will reach the required level through a set of recommended courses that, normally, will comprise approximately 80 per cent of their total course hours during the first two years. The remaining time will be applied to electives in preparation for the upper division courses in their major fields.

Students are encouraged to meet the requirements of the lower division and the major requirements of the upper division as rapidly as possible. Most will be able to complete the program in four years. However, they are not bound to fixed amounts of time or numbers of hours, and they are encouraged to make the fullest use of prior training and individual study. Those who demonstrate superior achievement and competence in an academic area are offered advanced courses and individual-study programs which give them an opportunity to complete degree requirements in fewer than four years.

In the case of certain courses, students who demonstrate advanced achievement may, without taking the course, obtain degree credit by passing special examinations, the nature of the examination depending on the subject. The examinations are prepared and administered by the department concerned under the general supervision of Academic Senate members of the college. No limit is set on the maximum credit that may be earned by examination. Students who are capable of completing their bachelor's degree requirements in an accelerated program will, with the approval of the Dean of Graduate Studies, be encouraged to select graduate courses in upper division electives.

COMMON LOWER DIVISION REQUIREMENTS

In order to fulfill the minimum lower division requirements in the principal fields of knowledge the student takes a recommended set of courses, the prerequisites for which have been met by the general admission standards of the University. The recommended courses are concerned with the following areas:

Humanities

The humanities sequence introduces the student to his cultural heritage. It rests on the principle that this heritage is found not in text books about the history of Western Civilization but in the great documents themselves in which it has assumed concrete form. These documents – literary, philosophical and historical – the student is invited to confront directly: through lecturer, group discussion, themes and conferences he will learn to interpret them, to discover their interrelations and to perceive their continuity.

The sequence opens with the study of contemporary works, then goes back to the Judaeo-Grecian beginnings and traces the development of Western Civilization forward again to the present. Essential to the course are the student's themes; in these he will be asked to come to direct and personal terms with what he has read, and to acquire the skills of clear and cogent expository writing. Every theme will be discussed intensively in individual conferences between student and instructor.

Social Sciences

The social sciences requirement, a one-year sequence of three courses in the sophomore year, offers students intensive instruction in selected aspects of the social and behavioral sciences. The courses may be integrated into a single sequence, or may be divided between such fields as modern economics, experimental psychology, and political science. Since the social science departments at UCSD are now in process of formation, the exact nature of the course or courses cannot be set forth at this time.

Mathematics

Mathematics has for centuries held an important place in education, in the sciences as well as in the humanities. In recent times its contribution to our culture, to our scientific and technological achievements, has increased so rapidly that it must now be regarded as the foundation of all scientific thinking and as a key to understanding a large part of our modern world.

As an integral part of his liberal education the student must be brought into contact with a significant area of mathematics. He should become acquainted not only with the rigor of the axiomatic method, but also with the substance of its concepts. Furthermore, he should gain the facility to apply mathematics in his studies of the physical, biological, and behavioral sciences.

The first courses in mathematics at UCSD present integrated sequences which develop the fundamentals of analysis and linear algebra. In both the lower and upper division the student will be encouraged to do independent work by means of honor classes and reading courses and to progress at the limit of his ability.

Physical and Biological Sciences

The science sequence presents the fundamental concepts of modern physical science and biology. It provides a background to further study in these disciplines and, for the non-scientist, an understanding and appreciation of current developments in these fields. In both breadth and emphasis, the program constitutes an appropriate terminal course for those students who will continue their studies outside the sciences.

The common requirement is met by a five-course sequence beginning in the winter quarter of the first year. Laboratory instruction is offered during the last three courses of the sequence. The first quarter concentrates on the scales and scopes of natural phenomena and on mechanics and electricity and magnetism; the second and third quarters, on thermodynamics, radiation and matter, atomic and nuclear structure; the fourth quarter, on the elements of chemical bonding.

The fifth quarter covers the nature of biology and of the principles which govern the biological world. With examples chosen from a wide variety of plant and animal sources, emphasis is placed on the characteristics common to all living cells and the points of divergence in structure and function.

Language

To be admitted to upper division standing, all students (including transfer students) must demonstrate ability to hold ordinary conversations and to comprehend ordinary written material in a major modern language (for 1965-66, French, German, Russian, or Spanish). By demonstrating his lower division language proficiency early, the especially gifted, industrious, or previously well-trained student may thus use the time reserved for language training to earn graduation credit in other courses and thus advance his progress toward graduation or toward early specialization.

The normal preparation for lower division language proficiency will be language courses in the student's freshman year. With normal high school preparation in language most students will require about a year of course work to prepare for the examination, but some students will take less time and some more, because of differences in ability, industry, and previous language work in high school, on other campuses, or in extracurricular activities.

To assist the student in attaining the required language proficiency, Revelle College offers four kinds of aid in its courses:

1. Self-instructional materials and equipment which the student can use to advance his proficiency at his own optimum speed.
2. A one-year program of small tutorial classes, conducted by native-speaking tutors. A student's assignment to a new tutorial class will be a measure of his increased proficiency; the classes will be recomposed each week to maintain homogeneity of class membership, permitting each class to be conducted at the highest level possible for each of its members.
3. Instruction by linguistic scientists about language and the learning of languages. This instruction is intended to serve the broad aims of general education as well as to assist the student in his own language study.
4. An extracurricular program (e.g.., foreign movies, "language tables" for meals, language clubs) offering informal opportunities for the student to practice using the language he is studying.

In summary, the program preparing a student for the common requirements of the lower division is:

FRESHMAN YEAR

**Fall Quarter:*

Humanities 1	The Present Age
Language 1	Language Tutorial (French, German, Russian, Spanish)
†Mathematics 1	Elements of Mathematical Analysis
or	
Mathematics 4	Calculus and Analytic Geometry

*Students will take only three courses in the fall quarter of 1965; each course will be given one and one-third course credits.

†The mathematics courses selected (Mathematics 1, 2, 3 or Mathematics 4, 5, 6) will depend on previous preparation in mathematics and the results of a placement examination.

Winter Quarter:

Humanities 2	Jews and Greeks
Language 2	Language Tutorial (French, German, Russian, Spanish)
Mathematics 2	Elements of Mathematical Analysis
or	
Mathematics 5	Calculus and Analytic Geometry
Physical Science 1	

Spring Quarter:

Humanities 3	Rome and the Middle Ages
Language 3	Language Tutorial
Mathematics 3	Elements of Mathematical Analysis
or	
Mathematics 6	Calculus and Analytic Geometry
Physical Science 2	

SOPHOMORE YEAR

**Fall Quarter:*

Humanities 4	Middle Ages and Renaissance
Physical Science 3	
*Social Science	
Elective	

Winter Quarter:

Humanities 5	Classicism and Enlightenment
Physical Science 4	
Social Science	
Elective	

Spring Quarter:

Humanities 6	The West after the French Revolution
Biology 1	Nature of Biology
Social Science	
Elective	

*Social science courses may be selected from economics, psychology, history and other social science courses which will be announced later.

THE UPPER DIVISION PROGRAM

A student may enter a major program only after completion of the general lower division requirements. These requirements may, however, be completed by transfer students as part of their upper division program.

The major programs will require up to fifteen upper division courses, the actual number varying from major to major. Some of the courses will usually be taken in other departments to add instruction to diversify the content of the major. Three elective courses will also be available, allowing the student to select courses outside his major in other fields of particular interest to him.

In addition to the major program and related elective choices, which will total up to eighteen courses in the upper division, all students will be required, during the junior and senior years, to take six courses in a field or sequence of fields not closely related to his major field. This "noncontiguous" minor will continue into the upper division general education of the student, which was started in his lower division years. The courses will be selected by the student, in consultation with his advisor, to form an interrelated sequence.

The student will be required to demonstrate in the upper division a general reading and speaking proficiency in a foreign language; this requirement may be fulfilled by a course sequence or examination.

Upper division courses will be offered in the following majors during the 1965-66 school year:

Aerospace and Mechanical Engineering Sciences
Chemistry
Earth Sciences
Mathematics
Physics

In addition to the majors listed above, upper division instruction in the following majors will probably be offered within the next four years:

Anthropology
Biology
Biochemistry
Economics
History
Literature (American, English, French, German, Spanish)
Linguistics
Philosophy
Political Science
Psychology

MAJOR PROGRAMS

AEROSPACE AND MECHANICAL ENGINEERING SCIENCES DEPARTMENT

Departmental Requirements

The Department of Aerospace and Mechanical Engineering Sciences offers two programs of study at the undergraduate level, each leading to the degree of Bachelor of Arts (Applied Science). Both programs have common required courses in the junior year so that a student must choose one of the two programs only at the end of that year. The *applied mechanics* program prepares the student for professional, graduate studies in aerospace and mechanical engineering while the *electromechanics* program does the same in those areas of electrical engineering related to guidance, control and energy conversion. Students considering a major in Aerospace and Mechanical Engineering Sciences are advised to take Mathematics 100 and Physical Science 5 in their sophomore year. The courses required by the department are to be supplemented by electives in contiguous and noncontiguous areas chosen in consultation with departmental representatives. Students with superior records are expected to take more than the minimum number of courses with special emphasis on AMES, mathematics, physical chemistry, physics, and applied electrophysics.

All departmental students are required to take, in their junior year, courses in fluid mechanics, thermodynamics and dynamics as contained in AMES 100-102, AMES 111, Physics 140 and AMES 120. Those students who have completed Mathematics 100 in their sophomore year are required to complete Mathematics 120, 121, 122 in their junior year; those who have not done so are also required to complete Mathematics 100 in the first quarter of the junior year. Superior students are encouraged to take courses in physics to supplement the minimum program of study.

Senior Year — Applied Mechanics Program

A student electing to follow the applied mechanics program is required during his senior year to complete his studies of fluid mechanics with AMES 103 and of dynamics with AMES 121-123. In addition he is required to study solid mechanics as contained in AMES 130-131. All seniors are required to complete three courses in their noncontiguous minor. Electives generally chosen in physics and necessary to fulfill minimum graduation requirements are to be selected in consultation with the departmental advisors. Superior students are encouraged to supplement a minimum program with courses in AMES, mathematics, physical chemistry, and physics.

Senior Year — Electromechanics Program

A student electing to follow the electromechanics program is required during his senior year to complete his studies of dynamics with AMES 121-123 and to complete a sequence of courses devoted to electrical elements, circuits and systems and identified as AMES 140-142. All seniors are required to complete three courses in their noncontiguous minor. Electives generally chosen in either physics or applied electrophysics necessary to fulfill minimum graduation requirements are to be selected in consultation with the departmental advisors. Superior students are encouraged to supplement a minimum program with courses in AMES, mathematics, physical chemistry, physics and applied electrophysics.

These programs are summarized below:

AEROSPACE AND MECHANICAL ENGINEERING SCIENCES CURRICULUM

JUNIOR YEAR
(Applied Mechanics and Electromechanics)

Fall Quarter:

AMES 100	Fluid Mechanics
Physics 140	Thermodynamics
Mathematics 120	Complex Variables
Noncontiguous Minor or Mathematics 100	

Winter Quarter:

AMES 101	Fluid Mechanics
AMES 111	Thermodynamics
Mathematics 121	Introduction to Ordinary and Partial Differential Equations
Noncontiguous Minor	

Spring Quarter:

AMES 102	Fluid Mechanics
AMES 120	Dynamics of Electromechanical Systems
Mathematics 122	Integral Transforms
Noncontiguous Minor	

SENIOR YEAR
(Applied Mechanics Program)

Fall Quarter:

AMES 121	Dynamics of Electromechanical Systems
AMES 103	Fluid Mechanics
Elective or Noncontiguous Minor	
Noncontiguous Minor	

Winter Quarter:

AMES 122	Dynamics of Electromechanical Systems
AMES 130	Solid Mechanics
Elective	
Noncontiguous Minor	

Spring Quarter:

AMES 123	Dynamics of Electromechanical Systems
AMES 131	Solid Mechanics
Elective	
Noncontiguous Minor	

SENIOR YEAR
(Electromechanics Program)

Fall Quarter:

AMES 121	Dynamics of Electromechanical Systems
AMES 140	Electronics
Elective or Noncontiguous Minor	
Noncontiguous Minor	

Winter Quarter:

AMES 122	Dynamics of Electromechanical Systems
AMES 141	Electronics
Elective	
Noncontiguous Minor	

Spring Quarter:

AMES 123	Dynamics of Electromechanical Systems
AMES 142	Electronics
Elective	
Noncontiguous Minor	

BIOLOGY

Departmental Requirements

The undergraduate program leading to a Bachelor of Arts in biology reflects the need to integrate the whole of the biological world, and to understand it in terms of the common principles which control living matter. The program simultaneously reflects the striking advances made in biology in recent years and the prospects of revolutionary developments in the future. New and powerful methods, employing all the allied resources of chemistry, physics, and mathematics, are now being used in a successful experimental and theoretical attack on major questions in biology that have defied answer for generations. These advances, particularly at the molecular and cellular level, have shed new light on the basic mechanisms which characterize living matter, and help to correlate into an integrated whole, the enormous diversity of the biological world.

To aid the student to understand contemporary biology and enable him to take his place in future developments, regardless of his chosen field of specialization, a core program in biology is offered. All majors in biology, whether they go on to graduate study, medicine, teaching, agriculture, etc., will take the same basic sequence of courses. This begins in the sophomore year, after an introduction to physics, chemistry, and mathematics, with an inquiry into the nature of living matter, its special characteristics and problems, as viewed particularly from the cellular level. There follows a two-year sequence in which the biological world is examined critically starting with the molecular and cellular bases for life processes, through the function of these processes at the organismal level, and ending with the complex organization of living forms. In addition, specialized graduate courses in biology are available for election by the student in his senior year.

In allied fields, courses in organic chemistry and in physical chemistry will broaden the experience of the biology major in contemporary directions. Other courses in physics, chemistry, and mathematics are available for election.

BIOLOGY CURRICULUM

JUNIOR YEAR

Fall Quarter:

Biology 100	Cell Biology
Chemistry 141	Organic Chemistry
Elective	
Noncontiguous Minor	

Winter Quarter:

Biology 101	Cell Biology
Chemistry 142	Organic Chemistry
Elective	
Noncontiguous Minor	

Spring Quarter:

Biology 110	Biology of Higher Organisms
Chemistry 143	Organic Chemistry
Elective	
Noncontiguous Minor	

SENIOR YEAR

Fall Quarter:

Biology 111	Biology of Higher Organisms
Chemistry 101	Physical Chemistry
Elective	
Noncontiguous Minor	

Winter Quarter:

Biology 120	Evolution, Biological Diversity and Biological Populations
Chemistry 102	Physical Chemistry
Elective	
Noncontiguous Minor	

Spring Quarter:

Biology 121	Evolution, Biological Diversity and Biological Populations
Chemistry 103	Physical Chemistry
Elective	
Noncontiguous Minor	

CHEMISTRY

Departmental Requirements

The undergraduate major in chemistry is intended to provide a preparation in the fundamentals which will enable a student to pursue his studies further in chemistry, or in related fields of science, engineering or medicine. The student wishing to major in chemistry will be required to demonstrate, by course grades or examination, mastery of the subjects listed in the general curriculum for lower division work (college requirement). In addition, the student who is considering a major in chemistry is advised to take Physical Science 4L and 5L in the sophomore year, or for transfer students, an equivalent laboratory course. Space will be made available during the fall quarter for the completion of the additional laboratory work in Physical Sciences 4L and 5L for those students who took Physical Sciences 4 and 5. It is desirable also that the student complete Mathematics 100 or its equivalent before the junior year, but the student may take this course in the first quarter of that year.

CHEMISTRY CURRICULUM

JUNIOR YEAR

Fall Quarter:

Chemistry 141	Organic Chemistry
Chemistry 101	Physical Chemistry
Elective	(Science or Mathematics)
Noncontiguous Minor	

Winter Quarter:

Chemistry 142	Organic Chemistry
Chemistry 102	Physical Chemistry
Elective	(Science or Mathematics)
Noncontiguous Minor	

Spring Quarter:

Chemistry 143	Organic Chemistry
Chemistry 103	Physical Chemistry
Elective	
Noncontiguous Minor	

SENIOR YEAR

Fall Quarter:

Chemistry 121	Inorganic Chemistry
Other Chemistry	(1 course)
Elective	(Science or Mathematics)
Noncontiguous Minor	

Winter Quarter:

Other Chemistry	(2 courses)
Elective	
Noncontiguous Minor	

Spring Quarter:

Other Chemistry	(2 courses)
Elective	
Noncontiguous Minor	

Chemistry courses listed in the preceding table are required of all majors. A senior student in good standing may be permitted to elect one or more graduate courses (200 series), with the consent of the instructor and the Dean of Graduate Studies.

Before graduation the student will take as electives at least three upper division courses in related sciences or mathematics. This requirement is intended to give breadth as well as depth to the student's scientific training. To take into account the needs of the individual student, he may, with the permission of the department, substitute courses in related departments for "other chemistry." Opportunities for independent work and for research (Chemistry 199) will be available for well-qualified students.

EARTH SCIENCES

Departmental Requirements

The undergraduate curriculum in earth sciences is principally designed to prepare students for advanced study and research by providing: (1) a strong background in mathematics, physics, and chemistry; (2) a basic knowledge of earth sciences; and (3) an introduction to important areas of present research in the earth and planetary sciences. Prospective majors must have fulfilled the general lower division requirements or their equivalent, and, in addition, are advised to take Physical Science 4L and 5L or equivalent in the sophomore year. Students are also advised to take Mathematics 100 or the equivalent during the sophomore year, otherwise this course must be taken in the first quarter of the junior year.

Majors are required to take a total of at least fifteen upper division courses in the physical and earth sciences and mathematics. These courses must include: (1) Chemistry 101, 102, 103 (physical chemistry); (2) at least three additional

upper division elective courses in mathematics, physics, or chemistry; (3) Earth Sciences 101, 102, 103. (Students who wish to concentrate in geophysics may petition the chairman for substitution of physics or mathematics courses for the physical chemistry sequence.)

In addition all majors are required to take the summer field course Earth Sciences 150, and to participate in the spring field program during their junior and senior years. Classical geologic areas such as the Colorado Plateau and the volcanoes of the Cascade Range are studied briefly during the recess between the winter and spring quarters each year.

Outside of these requirements, every effort is made to adjust the curriculum to the student's individual interests, insofar as they are consistent with broad preparation for advanced study. Thus one student may wish to concentrate his studies in mathematics, another in chemistry. Mathematics-science electives other than those required in mathematics, physics and chemistry, may be additional courses from these departments, or from other departments such as oceanography or engineering. Seniors may also elect 200 level courses from the graduate curricula, with approval of their advisors, the course instructors, and the Dean of Graduate Studies. The normal sequence of courses is as follows:

EARTH SCIENCES CURRICULUM

JUNIOR YEAR

Fall Quarter:

Earth Sciences 101	Introductory Geology
Elective	(Science or Mathematics)
Chemistry 101	Physical Chemistry
Noncontiguous Minor	

Winter Quarter:

Earth Sciences 102	Introductory Geochemistry
Earth Sciences 120	Mineralogy
Chemistry 102	Physical Chemistry
Noncontiguous Minor	

Spring Quarter:

Earth Sciences 103	Introductory Geophysics
Earth Sciences 121	Optical Mineralogy
Chemistry 103	Physical Chemistry
Noncontiguous Minor	

SENIOR YEAR

Fall Quarter:

Earth Sciences 122	Petrology
Elective	(Mathematics or Science)
Elective	
Noncontiguous Minor	

Winter Quarter:

Earth Sciences 115	Structural Geology
Elective	(Mathematics or Science)
Elective	
Noncontiguous Minor	

Spring Quarter:

Elective	(Mathematics or Science)
Elective	(Mathematics or Science)
Elective	
Noncontiguous Minor	

Occasionally opportunities arise for students to participate in long-range marine expeditions with members of the Department who are associated with Scripps Institution of Oceanography or Institute of Geophysics and Planetary Physics. Students actively assist in collecting and analyzing data related to research interests of the staff. Majors may petition the Department to participate in such expeditions; permission is granted on the basis of academic standing and interest.

ECONOMICS

Departmental Requirements

Each student concentrating in economics will be required to take Economics 1, and at least four of the upper division course sequences. Ordinarily, he should take Economics 100-101, 110-111, 130-132, and either Economics 120-122 or Economics 140-141. The economic concentrator must also take a seminar, preferably in his senior year. Honors students may be relieved of one regular course in order to take a double seminar thus facilitating writing an honors thesis.

The student concentrating in economics will have the usual privilege of elective courses in his sophomore year, as well as the required courses in science, humanities, and social sciences. He would be advised, also, to take a few courses in related fields such as political science, sociology, history, and mathematics.

The requirements for noncontiguous electives could be met by taking courses in the humanities, in mathematics, or in the sciences. An economics major, by exploiting these noncontiguous electives, may be able to write a seminar honors paper which could profit from courses in these noncontiguous fields. For example, he might study the relation of science to the economy, of research to growth, of education to growth, of medicine to income and growth, American literature in the last generation as reflecting the American economy, and the latter reflecting literature.

ECONOMICS CURRICULUM

JUNIOR YEAR

Fall Quarter:

Economics 100	Micro-Economics
Economics 120	Quantitative Economics
Elective	
Noncontiguous Minor	

Winter Quarter:

Economics 101	Micro-Economics
Economics 121	Quantitative Economics
Economics 110	Macro-Economics
Noncontiguous Minor	

Spring Quarter:

Economics 111	Macro-Economics
Economics 122	Quantitative Economics
Elective	
Noncontiguous Minor	

SENIOR YEAR

Fall Quarter:

Economics 130 or 140	
Economics 130	Public Policy
Economics 140	Economic History
Economics 190	Seminars and Independent Work
Elective	
Noncontiguous Minor	

Winter Quarter:

Economics 131 or 141	
Economics 131	Public Policy
Economics 141	Economic History
Economics 191	Seminars and Independent Work
Elective	
Noncontiguous Minor	

Spring Quarter:

Economics 132 (or restricted elective)	Public Policy
Economics 192	Seminars and Independent Work
Elective	
Noncontiguous Minor	

LITERATURE

Departmental Requirements

The only prerequisite to upper division literature courses is completion of freshman-sophomore requirements. However, literature majors who do not elect to take intermediate language courses during their sophomore year may find that, before enrolling in upper division foreign literature courses, they must bring their language proficiency up to the expected level by taking intermediate language work during their junior year. Accelerated lower division students may take advanced courses by permission of the Department.

Transfer students must demonstrate the same level of competence in a foreign language that is required of UCSD students. First-hand knowledge of the major documents of Western Civilization, such as is acquired in the UCSD humanities sequence, is assumed.

Major Program

The Literature Department expects its majors to take twelve upper division courses in the Department. Of these, a maximum of seven will be in one literature (the "primary" literature); the remaining five will be selected by the student, with the consent of his advisor, with this limitation: every major program must include at least three upper division courses taught in a language other than English.

In each primary literature, the following courses are required: Literature 101, 102, 103, 151.

Literature majors are required to pass a comprehensive examination, given in the last quarter of the senior year, as a prerequisite to the degree. They will be expected to demonstrate a reasonably continuous and coherent knowledge of the history of the primary literature they have selected, and a knowledge in depth of some periods, authors, and works in both the primary and another literature. Questions and answers will be, at least in part, in the language of the literature concerned.

MATHEMATICS

Departmental Requirements

The upper division curriculum provides programs for mathematics majors as well as courses for students who will use mathematics as a tool in the physical and behavorial sciences and the humanities.

The student majoring in mathematics will take, in addition to the basic calculus sequence (Mathematics 4, 5, 6) four courses in the upper division. The program will normally include a basic course in differential equations (Mathematics 100), vector calculus and matrices (Mathematics 101) and an introduction to analysis (Mathematics 102), as well as a one-year course in linear algebra and group theory (Mathematics 110-111-112). The remaining nine courses shall be chosen from areas in analysis, geometry, algebra and applied mathematics, fitted to the interests of the student, with the approval of a departmental advisor. The Department strongly recommends that students who plan to go on to graduate study in mathematics include the "Introduction to Analysis and Topology" (Mathematics 150-151) in their program.

In accordance with the general requirements for the B.A. degree the student will take 6 quarter courses in a noncontiguous minor field as approved by his major advisor.

In addition the student will take 3 quarter courses in an area in which mathematics plays a basic role (restricted elective). With a judicious choice of his program the student will still have three (unrestricted) electives open to complete the requirement for the B.A. degree.

Prior to graduation mathematics majors will be required to show reading proficiency in a foreign language: German, French, or Russian. Such proficiency may be acquired, for example, through courses taken as part of the noncontiguous minor.

Students who at the end of their freshman year expect to major in mathematics should use the three electives in the sophomore year to take Mathematics 100, 101 and 102. This will enable them to complete a strong major curriculum in the most orderly fashion as to preparation and continuity of courses.

Students who do not decide on the major until their junior year may satisfy one half of the requirements for the noncontiguous minor by a proper choice of their electives in the sophomore year. In this way they can complete all of the above requirements for the B.A. degree in the normal period of four years.

A detailed description of the two possible programs is given below.

Students will be encouraged to progress at a rate commensurate with their abilities. They will be able to accelerate their work by independent study and special seminars and to demonstrate their progress by proficiency examination in place of taking courses.

MATHEMATICS CURRICULUM

Program A: Including mathematics in the sophomore year

SOPHOMORE YEAR

Fall Quarter:

Humanities 4	
Social Science	
Physical Science 3	
Mathematics 100	Infinite Series and Differential Equations

Winter Quarter:

Humanities 5	
Social Science	
Physical Science 4	
Mathematics 101	Vector Calculus and Matrices

Spring Quarter:

Humanities 6	
Social Science	
Biology 1	Nature of Biology
Mathematics 102	Introductory Analysis

JUNIOR YEAR

Fall Quarter:

Mathematics 110	Linear Algebra and Group Theory
[1]Mathematics Elective	
Noncontiguous Minor	

Winter Quarter:

Mathematics 111	Linear Algebra and Group Theory
[1]Mathematics Elective	
Noncontiguous Minor	

Spring Quarter:

Mathematics 112	Linear Algebra and Group Theory
[1]Mathematics Elective	
Noncontiguous Minor	

SENIOR YEAR

Fall Quarter:

*Mathematics
†Mathematics
Elective
Noncontiguous Minor

Winter Quarter:

*Mathematics
†Mathematics
Elective
Noncontiguous Minor

Spring Quarter:

*Mathematics
†Mathematics
Elective
Noncontiguous Minor

Three electives are to be taken in an area in which mathematics plays a major role.

*Choices from: Mathematics 150-151, Introduction to Analysis and Topology, plus Mathematics 160, Introduction to Geometry, or Mathematics 166, Differential Geometry
Mathematics 120-121-122, Advanced Mathematics for the Physical Sciences
Mathematics 126-127-128, Elements of Partial Differential Equations and Integral Equations
Mathematics 130-131-132, Probability
Mathematics 130, 133-134, Probability and Statistics
Mathematics 141-142-143, Numerical Analysis
Mathematics 160-161-162, Introduction to Geometry

†Choices from: Any course in * not previously taken.
Graduate courses: Real Analysis, Complex Analysis, Algebra, Topology (each 3 quarters)

MATHEMATICS CURRICULUM

Program B: Beginning major in the junior year

JUNIOR YEAR

Fall Quarter:

Mathematics 100 Infinite Series and Differential Equations
Mathematics 110 Linear Algebra and Group Theory
Elective
Noncontiguous Minor

Winter Quarter:

Mathematics 101	Vector Calculus and Matrices
Mathematics 111	Linear Algebra and Group Theory
Elective	
Noncontiguous Minor	

Spring Quarter:

Mathematics 102	Introductory Analysis
Mathematics 112	Linear Algebra and Group Theory
Elective	
Noncontiguous Minor	

SENIOR YEAR

Fall Quarter:

°Mathematics
°Mathematics
†Mathematics
Elective or
Noncontiguous Minor

Winter Quarter:

°Mathematics
°Mathematics
†Mathematics
Elective or
Noncontiguous Minor

Spring Quarter:

°Mathematics
°Mathematics
†Mathematics
Elective or
Noncontiguous Minor

°Choices from: Mathematics 150-151, Introduction to Analysis and Topology, plus Mathematics 160, Introduction to Geometry, or Mathematics 166, Differential Geometry
Mathematics 120-121-122, Advanced Mathematics for Physical Sciences
Mathematics 126-127-128, Elements of Partial Differential Equations and Integral Equations
Mathematics 130-131-132, Probability
Mathematics 130, 133-134, Probability and Statistics
Mathematics 141-142-143, Numerical Analysis
Mathematics 160-161-162, Introduction to Geometry

†Choices from: Any course in ° not previously taken.
Graduate course: Algebra

PHILOSOPHY

Departmental Requirements

Students who wish to major in philosophy must have satisfied the general lower division requirements. No specific sophomore courses are recommended.

The Department feels that an undergraduate major in philosophy should acquaint himself with the achievements and methods of a variety of differing disciplines since these are in part the subjects of philosophical inquiry. The background thus acquired should be complemented by a small group of required courses in philosophy itself. Accordingly, we wish to arrange a major-minor program for each student, as well as a suitable, integrated grouping of noncontiguous courses. It is the view of the Department that specialized professional training in philosophy should be deferred until the student has reached the graduate level.

The specific upper division philosophy course requirements are:

1. Three courses in history of philosophy.
2. One course in logic.
3. Two courses in the following: ethics, political philosophy, philosophy of religion, or aesthetics.
4. Participation in a junior-senior seminar on specific problems, or major philosophers (2 courses). (TOTAL: 8 courses required)

In addition, it will normally be required that students take work at the junior-senior level in three of the following areas: psychology, literature, history or economics, or linguistics.

Requirements can be met by examination. In upper division courses, students will be expected to read materials in foreign languages, usually in French or German.

PHYSICS

Departmental Requirements

Students expecting to major in physics are strongly advised to take Mathematics 100, Mathematics 101, and Physical Science 5 in the lower division. Also, if graduate study in physics is planned, the language requirement should be met in German, Russian, or French, preferably German or Russian.

The upper division program is intended to provide basic education in several principal areas of physics, with some opportunity for study in neighboring areas in the form of restricted electives. Provision is made, both in the main course and in the elective subjects, for some training in a few of the more technological aspects of physics.

In the junior year the emphasis is on macroscopic physics; the two principal physics subjects are electromagnetism and mechanics. The mathematics background required for the physics program is completed in this year.

In the senior year a sequence of courses in quantum physics provides the student with the modern view of atomic and some aspects of subatomic physics, and teaches him the principal analytical methods appropriate in this domain. The relation of the microscopic to the macroscopic world is the subject of courses in thermodynamics and statistical physics, with illustrations drawn from gas dynamics and solid state physics. The quantum physics sequence aims at an integrated, descriptive and analytical treatment of those areas of physics where quantum effects are important, particularly atomic and nuclear physics and elementary particles.

PHYSICS CURRICULUM

JUNIOR YEAR

Fall Quarter:

Physics 110	Mechanics
Physics 100	Electromagnetism
Restricted Elective in Mathematics	
Noncontiguous Minor	

Winter Quarter:

Physics 111	Mechanics
Physics 101	Electromagnetism
Physics 100L	Electricity and Magnetism Laboratory
Mathematics 121	Introduction to Ordinary and Partial Differential Equations
Noncontiguous Minor	

Spring Quarter:

Physics 112	Electronics
Physics 102	Electromagnetism
Physics 101L	Electricity and Magnetism Laboratory
Restricted Elective	
Noncontiguous Minor	

SENIOR YEAR

Fall Quarter:

Physics 130	Quantum Physics
Physics 130L	Modern Physics Laboratory
Physics 140	Thermodynamics
Free Elective	
Noncontiguous Minor	

Winter Quarter:

Physics 131	Quantum Physics
Physics 131L	Modern Physics Laboratory
Physics 141	Statistical Physics
Free Elective	
Noncontiguous Minor	

Spring Quarter:

Physics 132	Quantum Physics
Restricted Elective	
Free Elective	
Noncontiguous Minor	

Mathematics:

For the restricted elective in mathematics in the junior year, Mathematics 120 is strongly recommended.

Students entering the upper division with a deficient mathematics background will have to make up this deficiency in the junior year. For example, a student who failed to take Mathematics 100 and 101 will be required to take these courses in the junior year in place of the noncontiguous minor. Depending on the use such a student might have made of his electives in the sophomore year, he may find it necessary to use some or all of his senior year free electives to complete the noncontiguous minor.

Chemistry:

The Department of Physics considers that a knowledge of the fundamentals of chemistry is essential for the study and practice of physics. Consequently, Physical Science 5, or equivalent, or any upper division chemistry course with associated laboratory, is required for the B.A. degree in physics.

Restricted Electives:

The restricted electives in mathematics are discussed above. The other restricted electives may be chosen from upper division or graduate courses in physics, chemistry, biology, or mathematics, subject to the approval of the Physics Department.

Noncontiguous Minors:

Noncontiguous minor programs in physics can be arranged in consultation with the Physics Department. Examples of such programs are:

a. Mathematics 100, 121; Physics 110, 130, 131, 132.

b. Mathematics 100, 121; Physics 130, 110, 160, 161.

c. Mathematics 100, 101; Physics 100, 101, 102, 112, plus 100L, 101L.

d. Mathematics 100, 101; Physics 110, 111, 140, 141.

Because of the large number of mathematics prerequisites required for physics courses, students electing their noncontiguous minors in the field of physics may find it desirable to supplement their noncontiguous minor by devoting some of their free elective time to additional courses in physics.

GRADUATION REQUIREMENTS

GENERAL REQUIREMENTS

A. A student in the lower division of Revelle College may not be admitted to a major until the general requirements have been completed. A transfer student at the junior or senior level not meeting the general requirements may, however, be admitted to a major. In these cases, the general requirements must be completed before graduation.

*B. The general requirements are:

1. Seven courses in humanities and fine arts.
2. Three courses in mathematics.
3. Five courses in the physical and biological sciences.
4. Three courses in the social sciences.
5. Verbal and reading proficiency in a foreign language, usually met by three courses.

With the approval, and under the direction, of the appropriate faculty bodies, any of the general requirements may be met by examination.

DEGREES

Revelle College will recommend, upon satisfaction of graduation requirements, the award of the degree, Bachelor of Arts, with the diploma specifying the major field. The minimum requirement for graduation will be forty-eight (48) courses. The department may require up to fifteen (15) upper division courses in the major, the courses to be taken in the department or in related fields.

Six (6) courses will be in a minor in fields not closely related to the major, to be selected in consultation with the college department or division and subject to approval by the college faculty or its designated representatives.

LANGUAGE REQUIREMENT FOR GRADUATION

The student will be required to demonstrate in the upper division a general reading and speaking proficiency in a foreign language. This proficiency can be demonstrated by examination or by satisfactory completion of course sequences in the major or the noncontiguous minor. The student will, in this way, carry through his upper division work the ability in foreign language he has acquired in the general education program of the lower division.

*To go into effect during the fall quarter of 1966. For courses successfully completed in 1964-65, six (6) quarter course credits will be given for each semester. In the fall quarter of 1965, when only three courses will be offered (humanities, mathematics, and language), each course successfully completed will be given one and one-third (1⅓) quarter course credits.

COURSES OF INSTRUCTION

Course Credit

UCSD will begin operation in the fall of 1965 on the quarter system. Credit for academic work is evaluated in terms of courses. Each course will require, for the average student, one-fourth of his class and study time. The number of courses per quarter, therefore, will be four, although exceptions may be granted upon petition to the Provost of Revelle College.

Undergraduate courses are numbered as follows:

1-49 . Lower division courses
100-199 Upper division courses

I Fall quarter
II Winter quarter
III Spring quarter

AEROSPACE AND MECHANICAL ENGINEERING SCIENCES

Upper Division Courses

100. Fluid Mechanics I

The physical characteristics, the methods of mathematical description, and methods of measurement relevant to static and moving fluids. Hydrostatics, manometry, and structure of atmospheres. Potential flow theory with application to airfoils and wings. Coordinated laboratory experiments and lectures devoted to experimental techniques in aerospace research including shock tubes, low-speed wind tunnels, transducers and lasers. Four hours lecture, two hours laboratory. Prerequisite or co-registration: Physics 140 and Mathematics 100.

101. Fluid Mechanics II

Continuation of AMES 100 concerned with compressible flow theory including generalized one-dimensional flow and wave phenomena. Coordinated laboratory experiments and lectures devoted to experimental techniques. Four hours lecture, two hours Laboratory. Prerequisites: AMES 100, Physics 140, Mathematics 120; also prerequisite or co-registration: AMES 111.

102. Fluid Mechanics III

Continuation of AMES 101 concerned with viscous flow theory including elementary boundary layer theory. Coordinated laboratory experiments and lectures devoted to experimental techniques. Four hours lecture, two hours laboratory. Prerequisites: AMES 101, AMES 111, Mathematics 121.

103. Fluid Mechanics I

Continuation of AMES 102 concerned with reacting flows, transport phenomena, combustion theory and with the applications to propulsion theory. Coordinated laboratory work. Four hours lecture, two hours laboratory. Prerequisite: AMES 102.

111. Thermodynamics II

Extension and applications of Physics 140. Thermodynamic cycles including idealized propulsion systems. Electromechanical processes including fuel cells and secondary power units. Calculation of thermodynamic functions for ideal gases from spectroscopic data. Three hours lecture. Prerequisite or co-registration: AMES 101.

120. Dynamics of Electromechanical Systems III

Course description to be available at a later date. Three hours lecture, two hours laboratory. Prerequisite: Mathematics 121.

121. Dynamics of Electromechanical Systems I

Continuation of AMES 120 with description to be available at a later date. Three hours lecture, two hours laboratory. Prerequisite: AMES 120.

122. Dynamics of Electromechanical Systems II

Continuation of AMES 121 with description to be available at a later date. Three hours lecture, two hours laboratory. Prerequisite: AMES 121, Mathematics 122.

123. Dynamics of Electromechanical Systems III

Continuation of AMES 122 with description to be available at a later date. Three hours lecture, two hours laboratory. Prerequisite: AMES 122.

130. Solid Mechanics II

Course description to be available at a later date. Four hours lecture, two hours laboratory. Prerequisite: AMES 102.

131. Solid Mechanics III

Continuation of AMES 130 with description to be available at a later date. Four hours lecture, two hours laboratory. Prerequisite: AMES 130.

140. Electronics I

Course description to be available at a later date. Four hours lecture, two hours laboratory. Prerequisite: AMES 120.

141. Electronics II

Continuation of AMES 140 with description to be available at a later date. Four hours lecture, two hours laboratory. Prerequisite: AMES 140.

142. Electronics III

Continuation of AMES 141 with description to be available at a later date. Four hours lecture, two hours laboratory. Prerequisite: AMES 141.

199. Independent Study for Undergraduates

Independent reading or research on a problem by special arrangement with a faculty member. Prerequisite: Consent of instructor.

BIOLOGY

Lower Division Course

1. Nature of Biology III

An introductory study of the nature of living matter, and of the principles which govern the biological world, its unifying features and its enormous diversity. The emphasis is on the chemical and physical bases of living processes. Four hours lecture, one hour recitation.

Upper Division Courses

100. Cell Biology I

The cell as the basic unit of living matter. Reproductive, metabolic, and regulatory functions of the cell are related to the chemical, physical and structural properties of cells and their constituents. Three hours lecture, four hours laboratory.

101. Cell Biology II

A continuation of 100.

110. Biology of Higher Organisms III

The structural and functional organization of selected tissues and multicellular organisms is examined, including their morphogenesis, growth and differentiation, and their response to external stimuli. Three hours lecture, four hours laboratory.

111. Biology of Higher Organisms I

A continuation of 110.

120. Evolution, Biological Diversity, and Biological Populations II

The nature of biological diversity is studied as a genetic and evolutionary phenomenon. The molecular basis of evolution and the ecological aspects of natural selection are emphasized. The structure and dynamics of biological communities, and their internal and external interactions, are related to the nature of the biological world. Four hours lecture.

121. Evolution, Biological Diversity, and Biological Populations III

Continuation of 120.

199. Independent Study for Undergraduates

Independent reading or research on a problem by special arrangement with a faculty member. Prerequisite: Consent of instructor.

CHEMISTRY

Lower Division Courses

The courses Physical Science 1-5 are given jointly by the Departments of Physics and Chemistry. These courses form an integrated sequence, designed to eliminate unnecessary overlap of content, and contain material equivalent to traditional lower division chemistry and physics courses. Course descriptions are given in the physics section.

Upper Division Courses

101. Physical Chemistry I

This is the first quarter of a three-quarter sequence dealing with the principles of theoretical chemistry and certain important applications. The treatment is at a

more advanced level than that in the Physical Science sequence. Major topics of the sequence include thermodynamics, the kinetic theory of gases, structure of molecules and solids, statistical theory of matter. Three lectures, one recitation.

102-103. Physical Chemistry II, III

Continuation of 101. Three lectures, two three-hour laboratory sessions. Prerequisites: Chemistry 101, Physical Science 4 L, 5 L or equivalent, Mathematics 100 or equivalent.

111-112. Thermodynamics

Thermodynamics applied to chemical substances, gas, liquids, solids, and solutions, with emphasis on methods for effective application to chemical problems. Three lectures.

121. Inorganic Chemistry I

This course treats descriptive inorganic chemistry from a modern standpoint, in the framework of the periodic table. Metals and non-metals, ions in solution, complex ions, inorganic reactions. Laboratory work will include inorganic syntheses, radioactive tracer methods. Three lectures, one three-hour laboratory.

122. Inorganic Chemistry

A continuation of 121.

141. Organic Chemistry I

Lecture and laboratory work for students whose major is chemistry or a closely related field such as biology or biochemistry. Prerequisites: Physical Science 1-4 or equivalent. This course is normally followed by 142 or 143 in sequence. The lectures will concern the character of chemical bonds, carbon and the periodic table, directional bonding, and covalency, stereochemistry, hydrocarbons, resonance, nomenclature, structure elucidation, physical properties, spectra, and correlations of structure and reactivity. The laboratory will involve measurement and correlation of physical properties and spectra; structure elucidation; preparation, seaparation and isomerization of isomeric compounds; acid and base strength measurements; and certain selected reactions. Three lectures, two three-hour recitation laboratories.

142. Organic Chemistry II

See 141 for a general description. Reactions of organic compounds will be discussed with a special emphasis on reactions taking place at tetrahedral carbon; from the point of view of the processes by which these reactions occur. A survey of the classes of reactions occurring on tetrahedrally substituted first row elements will be presented including molecular rearrangements. The laboratory will treat syntheses and rates, equilibria, and stereochemistry of selected reactions discussed in this period. Three lectures, two three-hour recitation laboratories. Prerequisite: Chemistry 141.

143. Organic Chemistry III

Reactions on trigonal and digonal carbon compounds will be discussed with reference to aromaticity and resonance, addition to and elimination to give double and triple bonds, nucleophilic and electrophilic reactions at unsaturated carbon, heterocyclic compounds, polymerizations, natural products. The laboratory will include aromatic substitution reactions, additions to olefins, amide and ester hydrolyses, kinetics and mechanism studies, and research projects for advanced students. Three lectures, two three-hour laboratory recitations. Prerequisite: Chemistry 142.

145. Structure and Properties of Organic Molecules

Introduction to the measurement and theoretical correlation of the physical properties of organic molecules. Topics to be covered include: simple molecular orbital theory, bond lengths, bond energies, dipole moments, ionization potentials, infra-red and ultraviolet spectra, nuclear magnetic resonance and electron spin resonance. Three lectures. Prerequisites: Chemistry 103, 143.

146. Kinetics and Mechanism

Methodology of mechanistic organic chemistry: integration of rate expressions, determination of rate constants; transition state theory; catalysis, kinetic orders; isotope effects, substituent effects, solvent effects; linear free energy relationships; product studies, stereochemistry; reactive intermediates; rapid reactions. Three lectures. Prerequisite: Chemistry 143.

147. Mechanisms of Organic Reactions

A detailed study of the mechanisms of various organic reactions: Carbonium ion reactions (substitutions, displacements, eliminations, additions, hydrolyses), Carbanion reactions (eliminations, substitutions, hydrolyses, condensations), Carbene reactions; rearrangements; multi-center reactions; free radical processes. Three lectures. Prerequisites: Chemistry 145, 146.

151. Qualitative Organic Analysis

The analytical methods and laboratory procedures used in the identification of organic compounds will be discussed and illustrated in laboratory experiments. Techniques to be covered include: application of class reactions, derivative preparation, vapor phase chromatography, infra-red and ultraviolet spectroscopy, and nuclear magnetic resonance spectroscopy. The student will apply these techniques to the identification of unknown samples and mixtures. One lecture, two three-hour laboratories. Prerequisite: Chemistry 143.
Not offered 1965-66.

153. Synthetic Organic Chemistry

Advanced methods of organic synthesis will be discussed in lecture and illustrated in laboratory experiments. Students will be introduced to the techniques of catalytic hydrogenation, organo-metallic reactions, photochemical reactions, fractional distillation, chromatography and other modern synthetic procedures. In the latter part of the course original projects will be assigned on an individual basis. One lecture, two three-hour laboratories. Prerequisite: Chemistry 143.

161. General Biochemistry I (same as Biology 201A)

This course is intended for students in the upper division or in their first year of graduate study. Together with Chemistry 162, it is designed to prepare students for entry into graduate study in biochemistry, and also to provide a basis for general understanding of modern biochemical research for all students.

The general concepts of modern biochemistry are presented. The first part of the course includes a review of relevant physical-chemical principles, followed by a description of cell type, the nature of enzymic reactions, metabolic cycles, and elementary kinetic analysis of enzyme reactions. In the second part of the course the chemistry of important classes of biological compounds – carbohydrates, lipids, proteins and nucleic acids – is studied. Some important metabolic cycles are described. Special topics, such as biochemical mechanisms in photosynthesis, the nitrogen cycle, and coupled biological oxidation, are included. Three lectures.

162. General Biochemistry II (same as Biology 201B)

This course is a continuation of Chemistry 161. The metabolism of carbohydrates,

proteins, lipids and nucleic acids is considered in terms of fundamental enzymic systems. Three lectures.

190. Mathematical Methods of Chemistry

Abstract arithmetic, calculus, special functions, differential equations; probability and statistics; vectors, matrices and determinants; applications of computers; group theory; linear algebra. Three lectures. Prerequisites: Chemistry 103, Mathematics 100.

199. Senior Reading and Research

EARTH SCIENCES

Upper Division Courses

101. Introductory Geology I

An introductory study and discussion of the origin and evolution of the earth, especially its crust, and the evolution of life as indicated by the fossil record. Emphasis is placed upon the nature of constituent rocks and minerals, their origin, reconstitution, and decay; the nature of evolution of continents, ocean basins and mountain belts; the processes of vulcanism; and the work of wind, water, and glaciers in modifying the earth's surface, with the aim of creating an awareness in the student of the geological environment in which we live. Three lectures; occasional field trips.

102. Introductory Geochemistry II

An introduction to the chemistry of the earth and the solar system, and the applications of physical chemistry and nuclear physics to the study of the origin and geological history of the earth. Subjects discussed include cosmic and terrestrial abundances of elements; nucleosynthesis; origin of the earth; mineralogy and chemistry of the earth's crust, mantle, and core; geochronology and the geological time scale; chemistry of the atmosphere and the oceans; the measurement of paletemperatures by oxygen isotopes. Three lectures, one discussion period.

103. Introductory Geophysics III

Selected geophysical subjects are treated in some depth. The emphasis is on topics that involve the entire planet earth: the propagation of elastic waves through the earth, oceans and atmosphere; gravity, isostasy and the shape of the earth; oceanic, atmospheric and bodily tides; mountains, earthquakes and the movement of continents. Three lectures.

115. Structural Geology II

A descriptive study of geologic structures and an introduction to their interpretation in the light of scale model studies and experimental work on the mechanical properties and deformation of rocks and minerals. Includes an introduction to the use of descriptive geometry and stereographic projection as aids in the description and understanding of complex structures. Three lectures.

120. Mineralogy II

An introduction to mineralogy designed primarily to prepare students of the earth sciences for the study of natural minerals. Subjects discussed in lectures and covered in laboratory work will include symmetry, morphology, crystal projections, goniometry, crystal structure, elementary x-ray crystallography, physical and chemical properties of minerals. Emphasis is placed on the properties of representative natural materials. Two three-hour periods of laboratory and lectures.

121. Optical Mineralogy III

The principles and techniques of the microscopic study of rock-forming minerals are studied. The course is designed to provide an understanding of optical methods utilizing polarized light in the interpretation of crystal structure and identification of minerals. Two three-hour periods of laboratory and lectures. Prerequisite: Earth Sciences 120.

122. Petrology I

Techniques learned in Earth Sciences 120 and 121 are applied to the study and identification of mineral assemblages in natural rocks. The chemical, mineralogical, and physical properties of igneous and metamorphic rocks are studied by microscopic and other laboratory methods, and the origin and genetic relations of rocks are interpreted in terms of geologic occurrence and theoretical or experimental data. Two three-hour periods of laboratory and lectures. Prerequisites: Earth Sciences 120, 121.

150. Field Geology (Summer Course)

Detailed field study of the geology of an area in the western United States. The area is chosen to permit broad application of principles of geology and various mapping techniques toward the solution of structural and stratigraphic problems as encountered in the field. Each student will complete a thorough geologic study of the area, and prepare a geologic report accompanied by a geologic map and structural and stratigraphic sections. This course normally requires full time for one summer month, and is given after the junior year.

199. Independent Study for Undergraduates

Independent reading or research on a problem by special arrangement with a faculty member. Prerequisite: Consent of the instructor.

ECONOMICS

Lower Division Courses

1-2-3. Elements of Economics I, II, III

Introduction to Economics. This course is required of all majors in economics. Ordinarily it will be taken in the sophomore year. The course covers the theory of economics, both micro and macro, and the application of this theory to large public issues of the day. Each student will have an opportunity to delve intensively into some aspect of this course in which he is especially interested. He will be required to write a paper on the subject of his special interest. Two lectures, one recitation.

Upper Division Courses

100-101. Micro-Economics I, II

This course treats particular market quantities, e.g., the price of meat, the output of Company A, the income of plumbers, the determinants of supply, cost and prices of particular services and commodities. The course is concerned with variations in market conditions (atomistic competition, monopoly, oligopoly), the theory of consumer behavior, the theory of the firm, market equilibrium. Three lectures and one section meeting.

110-111. Macro-Economics II, III

Macro-economics is concerned with over-all quantities: total national income and output, the general price level, total employment and unemployment, and particularly the determinants of national income and its distribution. Here the con-

tributions to income formation of consumption, savings, investment, government spending, taxation, and deficits and monetary policy are especially stressed. The course applies theory to the large issues of the day: unemployment, employment, price and economic stability, economic growth, productivity, and automation, and the balance of payments. The relation of economics, value judgements and institutional factors is emphasized. The emphasis is on theory, not application. Three lectures.

120-121-122. Quantitative Economics I, II, III

Mathematical economics, statistics, and econometrics. The elements of statistical theory and its application to such problems as the measurement of prices, of income and employment, and examinations of seasonal, cyclical and secular trends in the economy. Three lectures, one recitation. Prerequisite: Mathematics 3.

130-131-132. Public Policy I, II, III

The application of macro-economic and micro-economic theory to issues of public policy and the contributions of related disciplines, e.g., political science, sociology, education, history to the solution of these problems. Among the problems treated in the course are the following: economic growth and development, inflation, welfare, relations with other countries, government's role, the planning process, price supports, wages, productivity, collective bargaining, the relevance of education, housing and health, science and research, fiscal and monetary policy for growth, the distribution of income, unemployment, and regional development. Pecularіarities of the war economy will also receive attention. The student will *be required to study one problem intensively.* Two lectures, one recitation.

140-141. Economic History I, II

A survey of economic history in both Europe and the United States with major emphasis on the period since 1789 and on the United States. The objective will not be to cover every aspect of history, rather it will be to concentrate on a limited number of factors, such as population growth, regional trends, cyclical and secular movements in the economy, the contribution of private enterprise and government, comparisons of growth among countries. A major goal will be to tie macro-economic theory to the large issues of economic development, e.g., the relation of education and research to growth, the significance of discovery and investment, the relative contributions of fiscal policy, monetary policy, and direct approaches. Three lectures.

190-191-192. Seminars and Independent Work I, II, III

Each student will be required to take at least one seminar in his senior year. These seminars will encourage the student to work on a particular problem intensively, culminating in at least one major paper. He will have an opportunity to select a subject, theoretical or institutional, which interests him. The student will have an opportunity to defend his position in the seminar and also to criticize the work of others. Each seminar will cover a limited area; for example, one may deal with international economics. The student will have to obtain or start with a command of the elements of the special field, e.g., money. Papers in that seminar might cover such subjects as the Dollar Crisis, the British Devaluation of 1949, the Competitive Position of the United States, Pricing Policies in Export Markets, International Liquidity, the Theory of the IMF. Hours by arrangement.

HUMANITIES

This sequence of courses, offered jointly by the Departments of Literature, Philosophy and History, has the purpose of introducing the student to the Western cultural tradition. He will learn to interpret major literary, historical and philosophical documents through bi-weekly themes.

Lower Division Courses

1. The Present Age I
Documents in the literature and philosophy of the 20th century. Lecture and discussion – three meetings.

2. Jews and Greeks II
Readings from the Bible, Homer and the Greek dramatists, historians and philosophers. Lecture and discussion – three meetings.

3. Rome and the Middle Ages III
Documents in the literature, philosophy and history of Rome and Medieval Europe. Lecture and discussion – three meetings.

4. Middle Ages and Renaissance I
Documents in literature, philosophy and history of Medieval and Renaissance Europe. Lecture and discussion – three meetings.

5. Classicism and Enlightenment II
Documents in the literature, philosophy and history of the 17th and 18th centuries. Lecture and discussion – three meetings.

6. The West after the French Revolution III
Documents in the literature, philosophy and history of the 19th century. Lecture and discussion – three meetings.

LANGUAGE AND LINGUISTICS

Lower Division Courses

A one-year sequence of courses offers the student the opportunity to advance his mastery of a modern foreign language and his understanding of the nature of language. The student studies the language of his choice in a program of tutorials conducted by native speakers of the language, plus self-instruction with recorded and printed materials. General principles of language design are taught in a supplementary program of reading in modern linguistics and conferences with linguistic scientists. As soon as a student achieves the required lower division proficiency in speaking and reading everyday language, he enters an advanced reading program which permits him to gain additional credit for language work. In 1965-66, French, German, Russian, Spanish and English (as a foreign language, open only to students whose native language is not English) will be offered.

1-2-3 (F, G, R, S, E) Language (French, German, Russian, Spanish, English)
Everyday conversation and reading in a foreign language will be stressed in small tutorial classes. Student moves at his own pace through laboratory and tutorial work. After required proficiency is obtained, the student moves into a program of extensive reading in the language. Three hours tutorial, one hour linguistic conference, eight hours laboratory work.

Upper Division Courses

In 1965-66 the Department plans to offer no upper division major program in linguistics. However, upper division students interested in linguistics will be allowed to take the following basic courses.

100. General Linguistics
An introduction to the study of language. The analytical and descriptive methods

and devices of general linguistics. Phonological, morphological and syntactic systems. Comparative and historical linguistics, psycholinguistics, anthropological linguistics, and their relationships to general linguistics. Three hours lecture, two hours discussion, seven hours reading and exercises.

101. Syntax and Morphology

The syntax and morphology of natural languages and the relationship between grammatical and semantic structures will be examined. Three hours lecture, two hours discussion, seven hours reading and exercises. Prerequisite: Linguistics 100.

102. Phonology

The phonological structure of a number of natural languages will be examined. The role of a phonological description in the overall description of a natural language, and the relationship between phonological units and syntactic and morphological units. Three hours lecture, two hours discussion, seven hours reading and exercises. Prerequisite: Linguistics 100.

199. Independent Study for Undergraduates

Independent reading in linguistics by individual students. Prerequisite: Consent of Department.

LITERATURE

Lower Division Courses

For lower division students the Department of Literature offers courses of two kinds:

a. Courses numbered 11-20 are intermediate courses of readings and discussions in languages other than English. They are designed to develop language skills beyond the elementary level and to introduce the student to the cultural context of the literature concerned. The courses are not prerequisite to each other; one is given each quarter.

b. Courses numbered 21-30 are introductory courses in which important documents of post-medieval Western literature will be studied by genre: the novel, the drama, lyric poetry. Each genre will be treated in a separate quarter course.

12. Readings in German Literature and Culture I, II, III

The content of this course will change each quarter. The course may be repeated for credit. Three meetings. Prerequisite: Oral and reading proficiency equivalent to completion of Linguistics German 3.

16. Readings in Spanish Literature and Culture I, II, III

Three meetings. Prerequisite: Oral and reading proficiency equivalent to completion of Linguistics Spanish 3.

21. Introduction to Literature I

The Novel. Prose fiction from the 17th century to the present. Lecture and discussion. Three meetings.

22. Introduction to Literature II

The Drama. Dramatic literature from the 17th century to the present. Lecture and discussion. Three meetings.

23. Introduction to Literature III

Lyric Poetry. Lecture and discussion. Three meetings.

Upper Division Courses

A letter following the course number identifies the literature concerned; e.g., 101 E = 101 English and American; 101 G = 101 German; 101 S = 101 Spanish; 121 C = 121 Comparative Literature.

The courses listed below represent a program that the Department will offer as students and staff become available. In 1965-66 the following courses will be given: Literature 101 E, G, S; 102 E, G, S; 103 E, G, S; 151 E, G, S.

101 E, G, or S; 102 E, G, or S; 103 E, G, or S. The Great Tradition I, II, III
Three-quarter study, in chronological order, of important writers in each of the several literatures offered by the Department. Three lectures.

121 E. The Medieval Period
Three lectures.

122 E. The Renaissance
Three lectures.

123 E. The Enlightenment
Three lectures.

124 E. The Nineteenth Century
Three lectures.

125 E. American Literature: Nineteenth Century
Three lectures.

126 E. The Twentieth Century: English and American
Three lectures.

121 G. Medieval Literature
Three lectures.

122 G. Reformation and Baroque
Three lectures.

123 G. The Classical Drama
Three lectures.

124 G. Romanticism
Three lectures.

125 G. Nineteenth Century Fiction
Three lectures.

121 S. Medieval Literature
Three lectures.

122 S. Golden Age Drama
Three lectures.

123 S. The Nineteenth Century Novel
Three lectures.

124 S. The Generation of 98
Three lectures.

131 E. Studies in Fiction
Seminar. Two meetings.

132 E. Studies in Poetry
Seminar. Two meetings.

133 E. Studies in Drama
Seminar. Two meetings.

134 E. Studies in Criticism
Seminar. Two meetings.

131 G. Studies in the Eighteenth Century
Seminar. Two meetings.

132 G. Studies in the Nineteenth Century
Seminar. Two meetings.

133 G. Studies in the Twentieth Century
Seminar. Two meetings.

131 S. Studies in Golden Age Prose (except Cervantes)
Seminar. Two meetings.

132 S. Studies in Golden Age Poetry
Seminar. Two meetings.

133 S. Studies in the Eighteenth and Nineteenth Centuries
Seminar. Two meetings.

134 S. Studies in Twentieth Century Prose and Drama
Seminar. Two meetings.

135 S. Studies in Twentieth Century Poetry
Seminar. Two meetings.

141 E. History of the English Language
Seminar. Two meetings.

141 G. History of the German Language
Seminar. Two meetings.

142 G. Middle High German
Seminar. Two meetings.

151. The Major Writers
Intensive study of a pre-eminent writer in each of the several literatures offered by the Department:

151 E. Shakespeare
151 G. Goethe
151 S. Cervantes

Seminar. Two meetings.

199. (E, G, or S) Special Studies
Tutorial; individual guided reading.

MATHEMATICS

Lower Division Courses

As part of the general program of the lower division all students take a one-year course in mathematics. Mathematics 1, 2, 3 or 4, 5, 6, depending on their high school preparation.

Students with strong mathematical preparation and interest will have an opportunity to take more advanced courses or special sections which permit greater depth and stronger emphasis on logical and rigorous development.

1. Elements of Mathematical Analysis I

Differentiation and integration of algebraic functions; applications; basic analytic geometry in the plane. Three lectures, two recitations. Prerequisite: Two units of high school mathematics.

2. Elements of Mathematical Analysis II

Analytical trigonometry; differentiation and integration of trigonometric functions, the logarithm and the exponential function. Three lectures, one recitation. Prerequisite: Mathematics 1.

3. Elements of Mathematical Analysis III

Definite integral and its applications. Elements of linear algebra. Three lectures, one recitation. Prerequisite: Mathematics 2.

4. Calculus and Analytic Geometry I

Differential and integral calculus of functions of one variable: limit, continuity; differentiation of algebraic and trigonometric functions; applications. Definite integral, primitive function, fundamental theorem of the calculus. Elements of analytic geometry as needed in the development of the calculus. Three lectures, two recitations. Prerequisite: Three or more units of high school mathematics; in addition, one-half unit of trigonometry is desirable.

5. Calculus and Analytic Geometry II

Continuation of calculus of functions of one variable: differentiation and integration of logarithm, exponential functions, Taylor's formula. Parametric representation. Applications of integration. Elements of linear algebra; analytic geometry in 3 space. Three lectures, one recitation. Prerequisite: Mathematics 4.

6. Calculus and Analytic Geometry III

Calculus of functions of several variables: partial differentiation; directional derivative; total differential. Maxima and minima of functions of several variables. Lagrange multipliers, multiple integration. Three lectures, one recitation. Prerequisite: Mathematics 5.

Upper Division Courses

100. Infinite Series and Differential Equations

Convergence and divergence of series; power series; operations with power series. Linear differential equations; equations with constant coefficients. Systems. Solutions by infinite series, some special functions. Four lectures. Prerequisite or coregistration: Mathematics 6.

101. Vector Calculus and Matrices

Vector fields, differential operators, line-surface-volume integrals, Green's, Stokes', and Gauss' theorems. Implicit function theorem, transformations, jacobians, matrices, eigenvalue problems. Four lectures. Prerequisite: Mathematics 6.

102. Introductory Analysis

The real number system, properties of continuous functions, Riemann-Stieltjes integral. Functions defined in terms of integrals. Uniform convergence. Three lectures. Prerequisite: Mathematics 100.

109. Undergraduate Seminar

Reports by students on assigned reading material and/or discussion of assigned problems in areas compatible with the students' background. Designed to develop insight and originality as well as mathematical techniques. Three periods. Prerequisite: Consent of Department.

110. Linear Algebra and Group Theory I

Fields, vector spaces, direct products and sums, basis theorems, homomorphisms and matrices, dual spaces, transpose, subspaces and quotient spaces, induced endomorphisms, isomorphism theorems, exact sequences and splitting, invariant subspaces, trace. Three lectures. Prerequisite: Mathematics 6.

111. Linear Algebra and Group Theory II

Multilinear mappings with symmetry properties; tensor, symmetric and alternating products of vector spaces and homomorphisms; splitting theorems and basis theorems; determinants, forms. Three lectures. Prerequisite: Mathematics 110.

112. Linear Algebra and Group Theory III

Groups, homomorphisms, subgroups, quotients groups, homomorphism theorems, abelian groups as generalized vector spaces, classification of finitely generated abelian groups, permutation groups. Groups operating on vector spaces, classical groups, tensor representation of classical groups. Three lectures. Prerequisite: Mathematics 111.

120-121-122. Advanced Mathematics for the Physical Sciences

120. Complex Variables I

Complex numbers, complex valued functions, curves in the plane, analytic functions, Cauchy-Riemann equations, elementary functions and conformal mapping, basic concepts of 2-dimensional potential theory, complex integration, Cauchy's theorem, Cauchy's formula, power series, residue theory and applications. Ordinary differential equations in the complex plane. Four lectures. Prerequisite or co-registration: Mathematics 100.

121. Introduction to Ordinary and Partial Differential Equations II

Bessel, Hermite, Legendre and other special functions. Orthogonal expansions, eigenvalue problems, Sturm-Liouville theory. Some partial differential equations of mathematical physics. Boundary value problems, separation of variables. Four lectures. Prerequisite: Mathematics 100.

122. Integral Transforms III

Additional topics on Fourier series. Fourier, Laplace and other transforms. Application to ordinary and partial differential equations. Three lectures. Prerequisites: Mathematics 120, 121.

126-127-128. Elements of Partial Differential Equations and Integral Equations

Basic concepts and classification of partial differential equations. First order equations, characteristics, Hamilton-Jacobi theory, Laplace's equation, wave equation. heat equation. Separation of variables, eigenfunction expansions, existence and uniqueness of solutions.

Relation between differential and integral equations, some classical integral equations, Volterra integral equations, integral equations of the second kind, degenerate kernels, Fredholm alternative, Neumann-Liouville series, the resolvent kernel.

Maximum-minimum problems, method of Lagrange, classical problems in the calculus of variations, general formulation of a variational problem, special methods of solution, Euler-Lagrange equations, applications to physics: Fermat principle. Lagrangian and Hamiltonian formulation of mechanics, theorem of E. Noether. Three lectures. Prerequisite: Mathematics 121.

130. Introduction to Probability I

Probability spaces, independence and conditional probability, random variables, distributions, expectation, joint distributions, law of large numbers, central limit theorem. Three lectures. Prerequisites: Mathematics 101, 102.

131. Introduction to Probability II

Random walk, generating functions, runs and recurrent events, discrete fluctuation theory; Markov chains with discrete state space. Three lectures. Prerequisite: Mathematics 130.

132. Introduction to Probability III

Markov chains with continuous state space, simple diffusion-processes, stationary processes, fluctuations and queuing theory. Three lectures. Prerequisite: Mathematics 131.

133. Introduction to Statistics II

Random samples, linear regression, least squares, testing hypotheses and estimation, Neyman-Pearson lemma, likelihood ratios. Three lectures. Prerequisite: Mathematics 130.

134. Introduction to Statistics III

Goodness of fit, special small sample distribution and use, nonparametric methods, Kolmogorov-Smirnov statistic, sequential analysis. Three lectures. Prerequisite: Mathematics 133.

140. Programming of Computers

Logical design of computers, number representations, machine languages, problem-oriented languages, flow diagrams, iterative algorithms, program organization, debugging methods and symbol manipulation. Three lectures. Prerequisite: Mathematics 100.

141. Numerical Analysis I

Numerical approximations, interpolation, roots of equations and systems of linear equations, linear eigenvalue problems. Three lectures. Prerequisites: Mathematics 101, 102.

142. Numerical Analysis II

Difference equations, numerical differentiation and integration, numerical solution of ordinary differential equations, stability and error propagation. Three lectures. Prerequisite: Mathematics 141.

143. Numerical Analysis III

Extreme values, linear programming and monte carlo methods. Three lectures. Prerequisite: Mathematics 142.

150. Introduction to Analysis and Topology I

Set theory, Zorn's lemma, metric spaces, continuous mappings, completions, fixed point theorems, Baire's theorem, compactness, Lebesgue number, connectedness. Four lectures. Prerequisite: Mathematics 102.

151. Introduction to Analysis and Topology II

Uniform convergence on subsets, function algebras, Ascoli's theorem, Stone-Weierstrass theorems, structure of function algebras. Four lectures. Prerequisite: Mathematics 150.

160. Introduction to Geometry I

Review of vector spaces, bilinear forms, inner product geometry, affine geometry, projective geometry, quadrics. Grassmanians. Three lectures. Prerequisite or coregistration: Mathematics 110.

161. Introduction to Geometry II

Dilatations and translations, coordinates, affine geometry associated with a field, theorems of Desargue and Pappus, projective geometry. Three lectures. Prerequisite: Mathematics 160.

162. Introduction to Geometry III

Algebraic curves in the complex plane, regular and singular points, Bezout's theorem, local parametrization, Plücker's formulas, Lüroth's theorem. Three lectures. Prerequisite: Mathematics 161.

166. Differential Geometry

Normed vector spaces and differentiation, inverse and implicit function theorems, tangent vectors and vector fields, cotangent vectors, tensors, differential forms, Poincaré lemma, differential manifolds, tangent and cotangent bundles, deRham groups, Stokes' theorems, deRham theorems. Three lectures. Prerequisite: Mathematics 150.

199. Independent Study for Undergraduates

Independent reading in advanced mathematics by individual students. Three periods. Prerequisite: Consent of Department.

PHILOSOPHY

Lower Division Courses

10. The Nature of Philosophy I

An introduction to metaphysics and the theory of knowledge, dealing with such matters as the ultimate constituents and structure of the world, the nature of the mind, knowledge and truth. Two lectures and one discussion.

11. The Nature of Philosophy II

An introduction to value theory, dealing with questions about morality, politics, religion and art. Two lectures and one discussion.

12. Introduction to Logic III

An inquiry into the nature of argument, inference and proof, fallacies, etc. Three lecture-discussions.

Upper Division Courses

100. History of Philosophy
Pre-Socratic, Hellenic and Hellenistic philosophy. Examination of original sources in Greek and Roman philosophy. Three lecture-discussions.

101. History of Philosophy
Medieval and Renaissance philosophy. Examination of original sources from early Judeo-Christian philosophy through the Moslem and Christian Middle Ages up to the Renaissance and Reformation. Three lecture-discussions.

102. History of Philosophy
17th and 18th century. Examination of original sources from Francis Bacon to Kant. Three lecture-discussions.

110. Symbolic Logic
Introduction to mathematical logic. Three lecture-discussions.

111. Ethics
An inquiry into the nature of human conduct. Three lecture-discussions.

120. Political Philosophy
An examination of problems and theories concerning the nature of the state, society, and government. Three lecture-discussions.

121. Aesthetics
An inquiry into the nature of human artistic experience and works of art. Three lecture-discussions.

122. Philosophy of Religion
An examination of the nature of religious experience, the nature of faith, and the role of reason in religion. Three lecture-discussions.

160-161-162. Junior-Senior Seminar in Special Topics in Philosophy
Each quarter will be devoted to examination of a separate problem, set by the instructor. One seminar meeting of two-three hours. Prerequisite: Consent of the instructor.

199. Individual Study
Prerequisite: Permission of departmental advisor.

PHYSICS

Lower Division Courses

The courses listed below, Physical Science 1-5, are given jointly by the Departments of Physics and Chemistry. These courses form an integrated sequence, designed to eliminate unnecessary overlap of content, and contain material equivalent to traditional lower division chemistry and physics courses.

1. Physical Science II
Introductory lectures on the range of natural phenomena which can be understood in terms of the physical sciences are followed by the study of particle motion, special relativity, and the electrical effects of slowly moving charges. Applications are made to astronomy and to the structure of matter. Three hours lecture and two hours recitation. Prerequisites: Mathematics 1 or Mathematics 4. Co-registration: Mathematics 2 or Mathematics 5.

2. Physical Science III

A continuation of Physical Science 1 to the electrical effects of moving charges and time dependent fields, thermodynamics, and waves. The limits of validity of a classical wave or particle description of natural phenomena are discussed and are followed by an introduction to the quantum theory of atoms and radiation. Three hours lecture and two hours recitation. Prerequisite: Physical Science 1. Co-registration: Mathematics 3 or Mathematics 6.

3. Physical Science I

The principles of quantum mechanics are used to study the structure of nuclei, atoms, and molecules. Topics include the exclusion principle and its effect on the periodic table and the shell structure of nuclei, radioactive decay chains and radioactive dating, and the chemistry and physics of covalent and ionic binding in molecules and solids. Two hours lecture, two hours recitation, and three hours laboratory. Prerequisite: Physical Science 2.

4. Physical Science II

The interactions of atoms and bulk properties of matter are further explored. The elementary notions of thermodynamics, classical kinetic theory of gases, properties of gases, liquids, and solids, ionic and covalent bonding are developed in more detail, with special emphasis on systems of biological interest. Three lectures, one recitation, and one three-hour laboratory.

4 L. Physical Science II

Recommended for students intending to major in chemistry and others who wish to acquire some proficiency in the experimental methods of modern chemistry. Students attend the same lecture and classroom sessions as those in Physical Science 4. The laboratory will include work in qualitative and quantitative analysis, including instrumental methods. Two three-hour laboratory sessions.

5. Physical Science III

A further development of the chemical properties of matter, acids and bases, complex ions, oxidation-reduction, electrochemistry, rates of chemical reactions. Solid state chemistry. Three lectures, one recitation, one three-hour laboratory.

5 L. Physical Science III

This course bears the same relation to 5 as 4 L does to 4. The laboratory will include further analytical work, along with other physical measurements, including the study of kinetics. Emphasis will be on precision and accuracy of technique as well as the theoretical basis of experimental design. Two three-hour laboratory sessions.

Upper Division Courses

100. Electromagnetism I

Coulomb's law, electric fields, electrostatics. Conductors and dielectrics. Steady currents, elements of circuit theory. Four hours lecture. Prerequisite or co-registration: Mathematics 100.

101. Electromagnetism II

Magnetic fields and magnetostatics, magnetic materials, induction. AC circuits. Displacement currents. Development of Maxwell's equations. Three hours lecture. Prerequisite: Physics 100. Prerequisite or co-registration: Mathematics 101.

102. Electromagnetism III

Electromagnetic waves, radiation theory. Application to optics. Motion of charged particles in electromagnetic fields. Relation of electromagnetism to relativistic concepts. Four hours lecture. Prerequisite: Physics 101.

110. Mechanics I

Mechanics of systems of particles. Planetary motion. Lagrange's and Hamilton's equations. Statics and dynamics of rigid bodies. Relativistic mechanics. Four hours lecture. Prerequisite or co-registration: Mathematics 100.

111. Mechanics II

Theory of small vibrations. Elasticity. Elements of fluid mechanics. Four hours lecture. Prerequisite: Physics 110. Prerequisite or co-registration: Mathematics 101.

112. Electronics

Motion of charged particles in vacuum tubes. Tubes and solid state devices as circuit elements. Introduction to linear and non-linear network analysis. Microwaves and antennae. Three hours lecture. Prerequisites: Physics 101, 111.

130. Quantum Physics I

Atomic physics in the 19th century. Radioactivity, Rutherford experiments. Rohr model, optical spectra, x-ray spectra, electron spin, vector model. Three hours lecture. Prerequisites: Mathematics 121, Physics 110.

131. Quantum Physics II

Atomic structure according to wave mechanics. Schrödinger equation for hydrogen-like atoms. Pauli principle, Heisenberg principle. Particle in a periodic potential. Three hours lecture. Prerequisite: Physics 130.

132. Quantum Physics III

Elementary nuclear physics. Quantum mechanics of radiation. Elementary particles and scattering. Four hours lecture. Prerequisites: Physics 102, 131.

140. Thermodynamics

Classical thermodynamics including the first, second, and third laws. Thermodynamic potentials. Phase transitions. Applications to low temperature physics, radiation, and chemical reactions. Four hours lecture. Prerequisite or co-registration: Mathematics 100.

141. Statistical Physics

Elementary statistical mechanics, probablistic interpretation of entropy, fluctuation phenomena, transport phenomena. Four hours lecture. Prerequisites: Physics 140, 110.

150. Solid State Physics

Crystal symmetry, free electron gas, band structure, properties of insulators, semiconductors and metals. Atomic diffusion, alloys, electronic transport phenomena. Four hours lecture. Prerequisites: Physics 131, 141.

152. Continuum Mechanics

Mechanics of continuous media. Waves, instabilities, applications to earth sciences, oceanography, and aerodynamics. Three hours lecture. Prerequisite: Physics 111.

160. Survey of Astronomy and Astrophysics

Introduction to modern astronomy and astrophysics. Four hours lecture. Prerequisite: Physics 110.

161. Astrophysics I

The physics of stars, interstellar matter, and stellar systems. Four hours lecture. Prerequisites: Physics 160, 130.

162. Astrophysics II

Continuation of Physics 161. Four hours lecture. Prerequisites: Physics 161, 131, 141.

170 L. Advanced Laboratory (Half course or whole course).

Experimental study of a special problem in optics, cryogenics, resonance physics, nuclear physics, etc., using existing apparatus or development of new apparatus, or both. Hours by arrangement. Prerequisites: At least three physics laboratory programs or laboratory courses, and consent of instructor.

171 L. Electronics Laboratory (Half course)

Electrical networks, vacuum tube and transistor circuit analysis and design, with emphasis on applications to physical research. Four hours. Prerequisite: Physics 112.

172 L. Computer Laboratory (Half course).

Computer solution of practical problems in science and engineering. Mathematics of approximation methods, computer programming. Students will use the University computer to solve specific problems. This course may be offered as a mathematics course. Four hours. Prerequisite: Mathematics 121.

199. Special Project (Half course)

Independent reading or research on a problem by special arrangement with a faculty member. Four hours. Prerequisite: Consent of instructor.

Physics Laboratory Programs

Required for physics majors:

100 L. Electricity and Magnetism Laboratory I

Experiments with AC and DC circuits and electromagnetic phenomena in general. Magnetism. Four hours. Prerequisite or co-registration: Physics 101.

101 L. Electricity and Magnetism Laboratory II

Microwaves, electrodynamics. Electrical and electronic measurements and test equipment. Construction and testing of active circuits. Four hours. Prerequisite: Physics 100 L.

130 L. Modern Physics Laboratory I

Experiments in atomic physics, optics, physical electronics, fluid dynamics, surface physics, etc. Four hours. Prerequisite or co-registration: Physics 130.

131 L. Modern Physics Laboratory II

Continuation of Physics 130 L. Experiments in radioactivity, x-rays, atomic physics, resonance physics, solid state physics, etc. Four hours. Prerequisite: Physics 130 L.

ADMISSION TO THE UNIVERSITY OF CALIFORNIA

The admission requirements of the University are based on two principles:

That the best assurance of success in the University is shown by high quality of scholarship in previous work.

That the study of certain specified subjects will give the student both good preparation for study in the University and reasonable freedom in choosing his field of specialization.

All communications concerning undergraduate admission should be addressed to the Office of Admissions, Room 2104, Building B, University of California, San Diego, La Jolla, California 92038.

Information about admission to the Graduate Division of the University may be obtained from the Dean of Graduate Studies, Building B, University of California, San Diego, La Jolla, California 92038.

APPLICATION FOR ADMISSION

An application for admission should be filed with the Office of Admissions, Room 2104, Building B, University of California, San Diego, La Jolla, California 92038. Forms for that purpose may be obtained from the Office of Admissions during the periods listed below.

Applicants are urged to file early in the appropriate period.

Filing Periods

Fall Quarter (1965)—October 1, 1964 through March 1, 1965
Winter Quarter (1966)—February 1, 1965 through September 1, 1965
Spring Quarter (1966)—May 1, 1965 through December 1, 1965.

Admission requirements are uniform on all campuses of the University of California. Admission entitles the student to attend the campus of his choice if the required facilities are available. Since applications will be processed and acted upon in only one Office of Admissions, applications should not be directed to more than one campus.

If after an applicant has filed for admission his plans change and he prefers to register on a different campus, he must write to the Director of Admissions, University Hall, University of California, Berkeley, California 94720, indicating the campus where he now wishes to register and the reason for his change. His records will be transferred to the campus he wishes to attend provided facilities are available there. Such requests must be received at least three weeks before registration.

APPLICATION FEE

A nonrefundable fee of $5.00 is charged for each application for admission filed. The remittance may be by bank draft or money order, payable to The Regents of the University of California, and it must be attached to the application.

TRANSCRIPTS OF RECORD

The applicant is responsible for requesting the graduating high school and each college or university attended to send promptly official transcripts of record directly to the Office of Admissions where his application is on file.

Those applying as entering freshmen should ask the high school to submit preliminary transcripts showing the complete record through the sixth semester and listing courses in progress or planned. In every case, a final transcript including a statement of graduation will be necessary.

Transcripts from the last college attended should include a statement of good standing or honorable dismissal. A preliminary transcript should show work in progress.

NOTIFICATION OF ADMISSION

Applicants will be notified of their eligibility status on the dates listed below. Those who are admitted will be required to return a *Notice of Intention to Register* form, together with a nonrefundable fee of $25.00, which will be credited to the incidental fee if the student registers in the quarter for which he applied.

Dates for Notification of Admission–1965-66
Fall Quarter–April 15, 1965
Winter Quarter–December 1, 1965
Spring Quarter–February 1, 1966

FAILURE TO REGISTER

An applicant who is not eligible for admission or one who has been admitted but does not register in the term for which he applied, and who thereafter desires to attend the University, must submit a new application for admission, with a $5.00 fee. The new application will be acted upon in the light of current availability of facilities and current admission requirements.

SUBJECT A: ENGLISH COMPOSITION

The University requires every student to pass an examination in English composition (the Subject A examination) or to complete in college an acceptable course of at least 3 units in English composition with a satisfactory grade. Students who enter the University with credentials showing the completion elsewhere of acceptable college-level training in composition or a score of at least 600 in the College Entrance Examination Board Achievement Test in English Composition taken after they have completed the eleventh grade are considered to have met the Subject A requirement. All other students are required to take the examination given by the University. Although it is not required for admission, the test must be taken at the opening of the first term in attendance, if not taken previously. Students who neither pass the examination nor meet the requirement in one of the above ways will be required to take the noncredit course in English composition, for which a fee of $35.00 is charged.

VACCINATION CERTIFICATE

Every new student and every student returning to the University after an absence of one or more terms must present at the time of medical examination by the University Medical Examiners a certificate establishing the fact that he has been successfully vaccinated against smallpox within the last three years. A form for this purpose is routinely sent to all new students. Vaccination should be completed before registration.

INTERCAMPUS TRANSFER

An undergraduate student who is registered on any campus of the University, or who was previously registered in a regular session of the University and has not since been registered in another institution, may apply for transfer to another

campus of the University by filing the proper forms *on the campus where he was last registered in regular session.* The intercampus transfer application form and application for transcript of record form may be obtained from the Office of the Registrar and must be filed with that office within the filing periods listed under "Application for Admission."

PREPARATION FOR UNIVERSITY CURRICULA

In addition to the high school subjects required for admission to the University, certain preparatory subjects are recommended for many University curricula to give the student an adequate background for his chosen field of study. Lack of a recommended high school course may delay graduation from the University. Details of these recommendations will be found in the bulletin, *Prerequisites and Recommended Subjects,* which is ordinarily in the hands of high school and junior college counselors and which may be obtained from the campus Office of Admissions or the University Dean of Educational Relations, University Hall, University of California, Berkeley, California 94720.

A student needing additional preparation is advised to attend one of the many excellent California junior colleges. There he can take courses applicable toward the requirements of the college or school of the University in which he wishes to enroll.

ADMISSION TO FRESHMAN STANDING

An applicant for admission to freshman standing is one who has not registered in regular session in any college-level institution since graduation from high school.

If, at the time of high school graduation, the applicant does not meet the requirements given below for admission to freshman standing or does not qualify by examination, he must meet the requirements for admission to advanced standing. An exception to this regulation will be made only if the student's deficiency was the result of his not having studied one or more required high school subjects. Such a student can sometimes remove the deficiency during the summer; he should consult the Office of Admissions in advance.

REQUIREMENTS FOR ADMISSION TO FRESHMAN STANDING

An applicant for admission to freshman standing must meet the requirements listed below.

Graduation From High School

An applicant who has been graduated from a high school listed in *Public and Private High Schools in California with College Preparatory Programs Accredited by the University of California* will be admitted to the University upon the completion of prescribed courses with the required scholarship average.

An applicant who has been graduated from a California school not appearing in the above publication will, upon request to the Office of Admissions on the campus where he wishes to register, be instructed as to the procedure to follow. When a resident of California has been graduated from a high school outside California, the acceptability of the record is determined by the Office of Admissions.

Subject Requirements

a. *History,* 1 unit

This must consist of 1 unit of United States History, or one-half unit of United States History and one-half unit of civics or American Government.

b. *English,* 3 units

These must consist of six semesters of English composition, literature, and oral expression.

c. *Mathematics,* 2 units

These must consist of two semesters of algebra and two semesters of plane geometry or an integrated two-year course covering the same material. Advanced algebra and trigonometry may be substituted for algebra and trigonometry, and solid geometry for plane geometry.

d. *Laboratory Science,* 1 unit

This must consist of an eleventh- or twelfth-grade year course in one laboratory science. Both semesters must be in the same subject field.

e. *Foreign Language,* 2 units

These must be in one language. Any foreign language with a written literature is acceptable.

f. *Advanced Course,* 1 (or 2) units

This must be chosen from the following:
Mathematics, a total of 1 unit of second-year algebra, solid geometry, trigonometry, or an advanced course for which trigonometry is a prerequisite. Foreign language, either 1 additional unit in the same foreign language offered under *e* or 2 units of another foreign language. Science, 1 unit of either chemistry or physics in addition to the science offered under *d.*

Electives

Additional elective units to complete the minimum of 15 standard entrance units are also required.

Scholarship Requirements

At least a B average is required in courses taken after the ninth year used to meet the subject requirements. Grades received in elective courses or in courses taken in the ninth year or earlier are not used in computing this average. Subject requirements are satisfied by courses in which a grade of C or higher has been assigned. Grades are considered on a semester basis except from schools that give only year grades.

In determining the B average, a grade of A in one course will be used to balance a C in another, but an A may not be used to compensate for D, E, or F grades.

Courses taken in the ninth year or earlier in which a grade of D or lower is received may be repeated to establish subject credit.

Courses taken after the ninth year in which a grade of C or lower is received may be repeated to establish subject credit or to improve scholarship. Grades earned in the first repetition may be used to satisfy scholarship; grades of C or higher in additional repetitions will satisfy the subject requirement, but will not be counted higher than a C in scholarship computation.

Courses may be repeated in an amount not to exceed 2 units of the *a* to *f* pattern.

ADMISSION BY EXAMINATION

An applicant who is ineligible for admission to freshman standing and who has not attempted college work subsequent to high school (except during the summer session immediately following high school graduation) may qualify for admission by examination.

The University does not offer entrance examinations but accepts the results of examinations given by the Educational Testing Service for the College Entrance Examination Board.

To qualify by examination, the applicant must present scores in the Scholastic Aptitude Test (S.A.T.) and three Achievement Tests. The three Achievement Tests are to include English composition and one from each of the following two groups:

1. Social Studies and Foreign Languages
2. Mathematics and Sciences

The tests must be taken after completion of the first half of the eleventh grade. The first repetition of a test will be accepted, but the verbal and mathematics scores on the Scholastic Aptitude Test must be from the same sitting. The total score on the Scholastic Aptitude Test must be at least 1000; the scores on the three Achievement Tests must total at least 1650, and the score on any one Achievement Test must not be less than 500.

An applicant who has graduated from an unaccredited high school may qualify by examination under the foregoing rules.

Arrangements to take the tests should be made with the Educational Testing Service, P.O. Box 1025, Berkeley, California 94701, or P.O. Box 592, Princeton, New Jersey 08540. The fees are to be paid to the Educational Testing Service. Scores will be regarded as official only if they are received by the Office of Admissions directly from the Educational Testing Service.

Test Dates	*Application Deadline*
Saturday, March 6, 1965	February 6, 1965
Saturday, May 1, 1965	April 3, 1965
Wednesday, July 14, 1965	June 16, 1965
Saturday, November 6, 1965	October 9, 1965

(S.A.T. given in California and Indiana only)

Test Dates	*Application Deadline*
Saturday, January 8, 1966	December 11, 1965
Saturday, March 5, 1966	February 5, 1966
Saturday, May 7, 1966	April 9, 1966
Saturday, July 9, 1966	June 11, 1966

Applicants should arrange to take the tests as early as possible. *The scores of an applicant who takes the tests in March may be reported too late for consideration for admission in the fall; similarly, the scores of an applicant who takes the tests in November may be reported too late for consideration for admission in the spring.*

ADMISSION TO ADVANCED STANDING

An applicant who has registered in a junior college, a four-year college, a university, extension classes of college level, or any comparable institution since graduation from high school is subject to regulations governing admission to advanced standing. The applicant may not disregard his college record and apply for admission to freshman standing.

REQUIREMENTS FOR ADMISSION TO ADVANCED STANDING

An applicant for admission to advanced standing must meet the requirements listed below:

The requirements for admission to advanced standing vary in accordance with the high school record of the applicant. Each applicant, however, must present from the last accredited college or university attended a statement of good standing and an academic record with a grade-point average* of C (2.0) or better. If the

record established in any one accredited institution is below a C (2.0) average, an additional unit and scholarship requirement may be imposed on subsequent credit completed to offset the deficit incurred. In addition, the applicant must meet one of the following conditions:

1. An applicant who was eligible for admission to the University in freshman standing, may be admitted at any time he has established an overall grade-point average of C (2.0) or better.
2. An applicant who was ineligible for admission to the University in freshman standing, but whose only deficiency arose from not having studied one or more of the required high school subjects, may be admitted when the following conditions are met:
    a. He has established an overall grade-point average of C (2.0) or better.
    b. He has satisfied, by appropriate courses, the subject requirements for admission to freshman standing.

*The grade-point average is determined by dividing the total number of acceptable units attempted into the number of grade points earned on those units. Courses completed with a grade lower than C may be repeated, but the units and grade points count each time the course is taken. Scholarship standard is expressed by a system of grade points and grade-point averages in courses acceptable for advanced standing credit in the University of California. Grade points are assigned as follows: for each unit of A, 4 points; B, 3 points; C, 2 points; D, 1 point; E and F, no points.

Exception: Deficiencies in subject requirements will be waived in an amount not exceeding 2 high school units if the applicant has established a minimum of 56 acceptable units passed with a grade-point average of 2.4 or better. Subject deficiencies in excess of 2 units must be satisfied.

3. An applicant who was ineligible for admission to the University in freshman standing because of low scholarship or a combination of low scholarship and incomplete subject preparation (omission, or by grades of D or lower) may be admitted when the following conditions are met:
    a. He has established a minimum of 56 acceptable units passed with a grade-point average of 2.4 or better.
    b. He has satisfied, by appropriate courses, subject requirements for admission to freshman standing except that subject deficiencies will be waived in an amount not exceeding 2 high school units.

Deficiencies

In the case of a student who is technically ineligible for admission to the University, the Admissions Officer has authority and responsibility to consider other evidence of ability to pursue university work.

Credit for Work Taken in Other Colleges

The University grants unit credit for courses consistent with its curriculum that have been completed in colleges and universities accredited by appropriate accrediting agencies.

As an integral part of the system of public education of California, the University accepts, at full unit value, approved transfer courses completed with satisfactory grades in the public junior colleges of the state. Frequently, students who intend to complete their advanced studies at the University will find it to their advantage to complete the first two years of their college course in one of the many excellent California public junior colleges. After a student has earned 70 units acceptable toward a degree, no further credit will be granted for courses completed at a junior college.

The decision regarding the acceptability of extension courses taken at an institution other than the University rests with the Office of Admissions. The decision regarding the applicability of such course work in satisfaction of degree requirements rests with the faculty of the particular school or college in which the student plans to enroll.

REQUIREMENTS FOR NONRESIDENT APPLICANTS

It has been necessary to place some limitation on enrollment of applicants who are not residents of California, and, therefore, only those of exceptional promise will be eligible for admission. The regulations below are designed to admit nonresident applicants whose standing, as measured by scholastic records, is in the upper half of those who would be eligible under the rules for California residents.

REQUIREMENTS FOR ADMISSION TO FRESHMAN STANDING

Graduation from High School

The acceptability of records from high schools outside California will be determined by the Office of Admissions.

Subject Requirements

The same subject pattern as for a California resident is required.

Scholarship Requirements

The scholarship requirements for a resident applicant apply to a nonresident applicant except that the scholarship average must be 3.4 or higher on the required high school subjects.

ADMISSION BY EXAMINATION

A nonresident applicant who is ineligible for admission to freshman standing and who has not attempted college work subsequent to high school (except during the summer session immediately following high school graduation) may qualify for admission by examination. The requirements for a resident applicant apply to a nonresident applicant except that the total score on the Scholastic Aptitude Test must be at least 1100 and the scores on the three Achievement Tests must total at least 1725.

REQUIREMENTS FOR ADMISSION TO ADVANCED STANDING

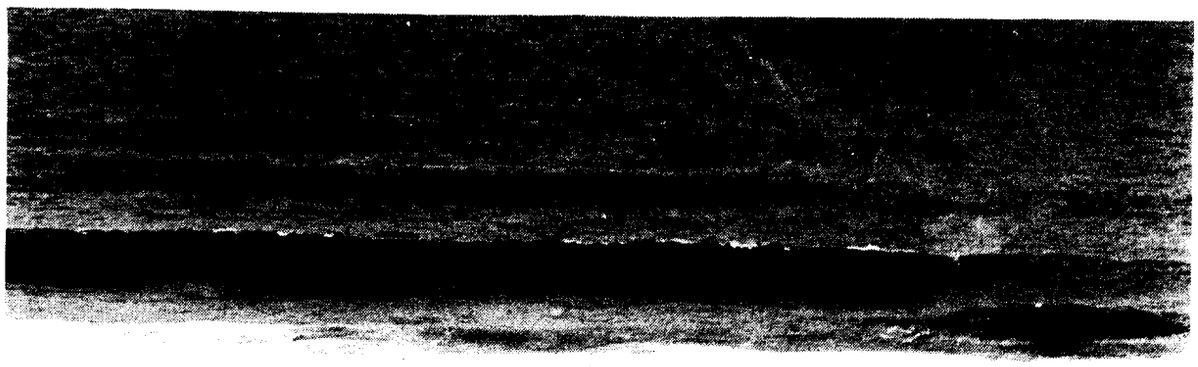
In addition to the regular admission requirements, a nonresident applicant for admission to advanced standing must have maintained a grade-point average of 2.8 or higher in college subjects attempted and acceptable for transfer credit. If the applicant did not have at the time of high school graduation an average of 3.4 or higher in courses satisfying the required subject pattern, he must present a minimum of 56 acceptable units passed with a grade-point average of 2.8 or higher.

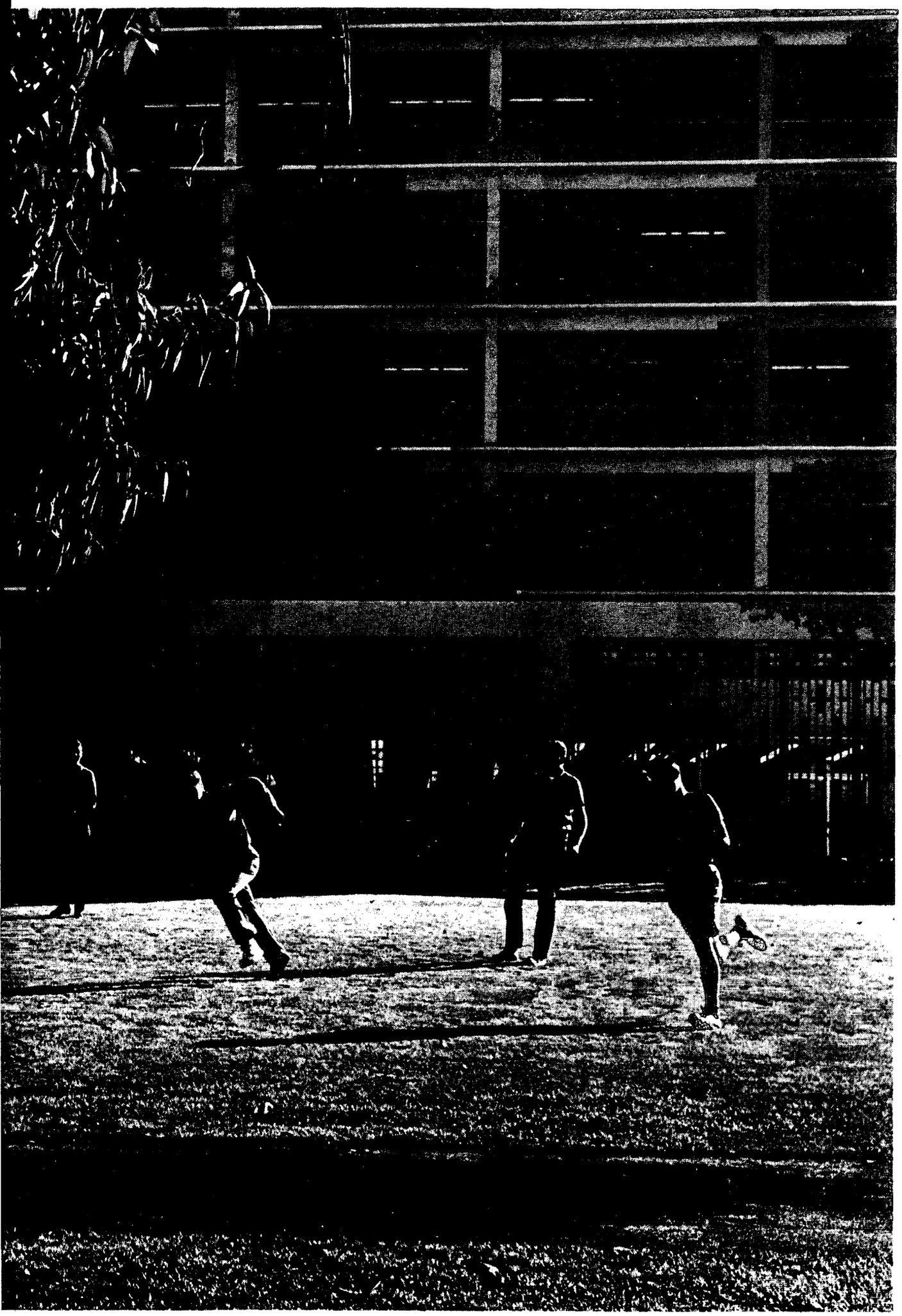
ADMISSION OF APPLICANTS FROM OTHER COUNTRIES

The credentials of an applicant for admission from another country in either undergraduate or graduate standing are evaluated in accordance with the general regulations governing admission. An application, official certificates, and detailed transcripts of record should be submitted to the Office of Admissions several months in advance of the opening of the quarter in which the applicant hopes to gain admittance. Doing so will allow time for exchange of necessary correspondence and, if the applicant is admitted, will help him in obtaining the necessary passport visa.

An applicant from another country whose native language is not English may be admitted only after demonstrating that his command of English is sufficient to permit him to profit by instruction in the University. The applicant may arrange to take the *Test of English as a Foreign Language* in his own country by writing directly to the Educational Testing Service, P. O. Box 592, Princeton, New Jersey 08540, or P. O. Box 1025, Berkeley, California 94701. The fee for these examinations should be sent to the Educational Testing Service, and not to the University. The applicant should request that his scores in the tests be forwarded to the Office of Admissions on the campus where he plans to enroll. Or, the applicant's knowledge of English may be tested by an examination given by the University. However, admission of an applicant who fails to pass this examination will be deferred until he has acquired the necessary proficiency in the use of English.

A student from a country where the language is not English is given college credit in his own language and literature only for courses satisfactorily completed in his country at institutions of college level, or for upper division or graduate courses taken in the University of California or in another English-speaking institution of approved standing.





GENERAL INFORMATION FOR STUDENTS

STUDENT SERVICES

STUDENT ACTIVITIES

University students learn not only from their work in the classroom but also by participation in organized extracurricular activities. Through participation the student has much opportunity for character growth and personality development. At UCSD you will find various student groups and activities covering a wide range of interests and offering experience in student government, community services, social clubs, and intramural athletics.

The University sponsors many student groups usually affiliated with one or more of the academic departments but the largest number of activities will, in the future development of UCSD, fall under the direction of the Associated Students of the University of California, San Diego – ASUCSD.

No matter what the student's interests and abilities may be, he should have no trouble in finding a group with which to work and relax in spare time. The University strongly believes that extracurricular activities should be an integral part of college life and that they are beneficial in obtaining a well-rounded education.

EXPENSES, HOUSING AND FINANCIAL AIDS

FEES AND EXPENSES

The exact cost for a student to attend the University of California, San Diego, will vary according to personal tastes and financial resources of the individual. Generally the total expense for three quarters or a college year will average about $1,710 for residents of California and $2,130 for nonresidents.

It is possible to live simply and to participate moderately in the life of the student community on a limited budget. The best that the University authorities can do to assist the student in planning his budget is to indicate certain and probable expenses.

INCIDENTAL FEE

The incidental fee is $73.00 each quarter for graduates and undergraduates. This fee, which must be paid at the time of registration, covers certain expenses for use of library books, for recreational facilities and equipment, for registration and graduation, for all laboratory and course fees, and for such consultation, medical advice, and hospital care or dispensary treatment as can be furnished by the Student Health Service or furnished by health and accident insurance purchased by the University. No part of this fee is refunded to students who do not make use of these privileges.

MISCELLANEOUS EXPENSES

Books and stationery for a student average about $40.00 per quarter. Exact information on these items may be obtained by writing directly to the school or department. Students who fail to pass the required examination in Subject A must pay a fee of $35.00 for the course in Subject A.

PARKING FEE

A parking fee is required of students who park cars on the campus.

TUITION

Tuition is free to every student who has been a legal resident of the State of California for a period of more than one year immediately preceding the opening day of the quarter during which he proposes to enroll. Every student who has not been a legal resident of the state for said period is classified as a nonresident and is subject to payment of a nonresident tuition fee. A student entering the University for the first time should read carefully the rules governing the determination of residence as quoted below so that he may be prepared in the event of nonresident classification to pay the required tuition fee. Every entering student and every student returning to the University after an absence is required to make a statement as to residence on the day of registration upon a form that will be provided for that purpose and his status with respect to residence will be determined soon after registration by the Attorney in Residence Matters.

The eligibility of a student to register as a resident may be determined only by the Attorney in Residence Matters. If the student is in doubt about his residence status, he may communicate with the Attorney in Residence Matters at 590 University Hall, University of California, Berkeley 94720.

Students classified as nonresidents are required to pay a tuition fee of $200 each quarter. This fee is in addition to the incidental fee. (Exemption from payment of the nonresident tuition fee may be granted to an unmarried minor whose parent is in the active military service of the United States and is stationed in California on the opening day of the quarter during which the minor proposes to attend the University or to an unmarried minor child or spouse of a member of the University faculty.) Graduate students may have part or all of the nonresident tuition fee waived under certain conditions set forth in the *Announcement of the Graduate Division.*

RULES GOVERNING RESIDENCE

The residence classification of each student is determined in accordance with Section 244 of the California Government Code, Sections 23054, 23055 and 23057 of the California Education Code and the Standing Orders of The Regents. It is therein provided that a resident student is any person who has been a legal resident of the State of California for more than one year immediately preceding the opening day of the quarter during which he proposes to enroll.

The attention of the prospective alien student is directed to the fact that he is a nonresident unless, in addition to the general residence requirements for tuition purposes, he has been admitted to the United States for permanent residence in accordance with all applicable laws of the United States. The attention of the prospective student who has not attained the age of 22 and whose parents are not California residents and the attention of the veteran who was not a resident of California at the time of his entrance into the Armed Forces is directed to the fact that presence in California for more than one year does not, of itself, entitle the student to classification as a resident.

Every student who is classified as a resident but who becomes a nonresident of California is obliged to notify the Attorney in Residence Matters at once. Application for a change of classification with respect to a previous quarter will not be accepted under any circumstances.

A person incorrectly classified as a resident student is subject to reclassification as a nonresident. If the incorrect classification resulted from concealed facts or untruthful statements made by him, the student then shall be required to pay all tuition fees which would have been charged to him as a nonresident student. He shall also be subject to such discipline as the President of the University may approve.

SCHOLARSHIPS

Undergraduate scholarship awards are made annually to students whose eligibility is based on academic achievement, character and promise and, except for the Regents Scholarships, on financial need. The amount of the stipend in each case is based on need, which is determined according to criteria established by the College Scholarship Service. Information and application forms for the next academic year are available in the Office of the Dean of Student Affairs in November, and must be filed not later than the preceding February 15.

LOANS

All loans for both graduate and undergraduate students are initiated in the Office of Dean of Student Affairs. A few individuals and organizations have made contributions to student loan funds. These are administered by the University according to the wishes of the donors and are not usually available during the first quarter of residence. Regularly enrolled students or applicants for admission to the University, who are United States citizens or permanent residents of the United States, are eligible to apply for National Defense Education Act student loans. The maximum loan that any undergraduate student may obtain is $1,000 for one academic year, and the total that any undergraduate student may borrow under this program is $5,000. A recent amendment of the National Defense Student Loan Program provides that graduate and professional students may now borrow a total of $2,500 per academic year and a maximum of $10,000 during their entire academic career. However, where demand exceeds funds available on any campus, loans may be granted on a competitive basis and their size restricted. Special consideration is given to students with a superior academic background regardless of major.

EMPLOYMENT

Many students who attend the University expect to earn a part of their expenses. However, the undergraduate curricula are organized on the assumption that a student will give most of his time and attention to college studies. Any outside employment should be taken with full realization of academic responsibilities. The importance of planning one's time cannot be overemphasized.

A few part-time jobs are available to students who can adjust their academic programs to the employers' needs. Usually class schedules must be arranged before referrals for employment can be given.

The Student and Alumni Placement Office, room 2116, Building B, assists students in finding part-time employment both on and off campus. No charge is made for this service. Personal interviews are necessary, as arrangements cannot be made satisfactorily by correspondence. Those wishing part-time work should register with the Student and Alumni Placement Office upon arrival on the campus.

Career Placement Services are available to terminating students, graduates, and alumni who have matriculated on one of the campuses of the University.

VETERANS AFFAIRS

The Dean of Student Affairs acts as liaison agent with certain veterans agencies, the Veterans Administration, the State Department of Veterans Affairs, and others offering veterans educational benefits. This office is located in room 2116, Building B. Offices of the United States Veterans Administration are located as follows:

Los Angeles Regional Office, 1380 South Sepulveda Boulevard
Los Angeles, California 90025

San Francisco Regional Office, 49 Fourth Street
San Francisco, California 94103

LIVING ACCOMMODATIONS

The number of living accommodations on campus for unmarried students is limited at the present time. The Housing Questionnaire accompanying the Admissions application must be returned with the application. Appropriate information will be sent to the applicant by the Housing Office upon receipt of the Questionnaire. Limited quarters at the recently acquired military installation are being converted to dormitory facilities. Residence halls are in the process of construction and it is hoped that some of them will be ready for the first quarter of the 1965-66 academic year. It is certain that the new halls will be completed in January 1966. Presently enrolled students will have priority for them. It is probable that a few women will again be assigned to one-bedroom-with-kitchen units in the campus residential apartments. Prices for all types of University accommodations are in the process of being adjusted to conform with the quarter system.

The Housing Office will assist others in finding suitable accommodations off campus in the surrounding communities of La Jolla, Pacific Beach or Del Mar. There are a small number of apartments available within easy walking distance of the campus, many of which are of the studio-apartment type, large enough for two students to share and in which the student-tenants may do their own cooking. There are some limited room-and-board situations. Rates per month may vary from $50 for a room to $100 and up for an apartment or room and board. Students must call in person at the Housing Office to make arrangements for off-campus housing. General information is available by mail from the Housing Office.

STUDENT HEALTH SERVICE

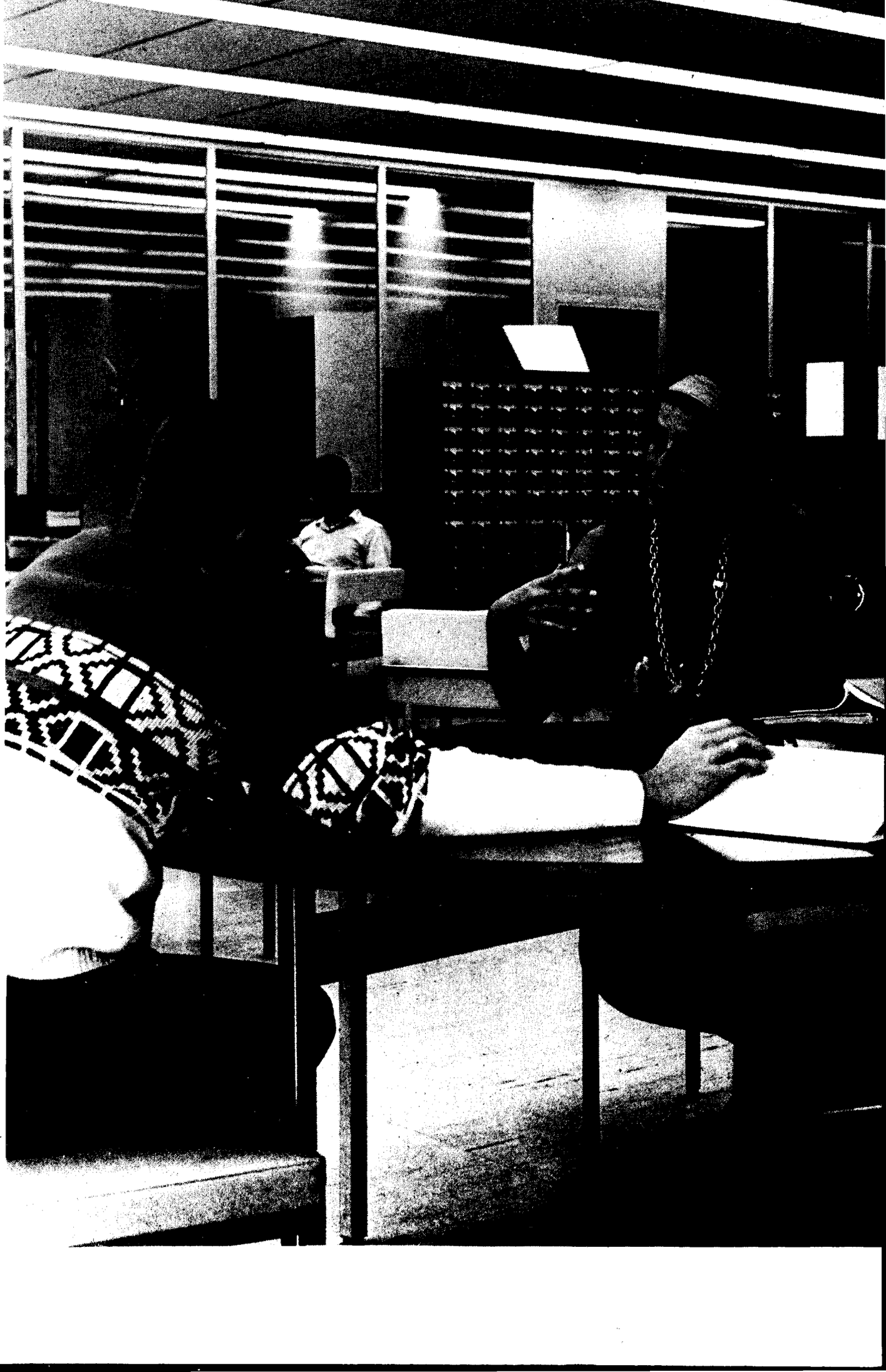
The Student Health Service provides out-patient care for minor illness and injury during school hours. Referral to a competent local physician is made when indicated for more involved problems.

Hospitalization is available at nearby Scripps Memorial Hospital and there are emergency facilities for night and weekend hours.

The payment of the incidental fee provides Student Health Service as one of the several student services. The University supplements the campus medical facility and service by purchasing insurance which covers private physician care and hospitalization charges, with the approval of and referral by the Student Health Director.

At the time of registration the physical examination form completed by the student's private physician is reviewed and any medical problems that the student might have, are discussed.

The prime objective of the Student Health Service is to maintain the student's mental and physical health to allow maximum scholastic achievement. To this end students are encouraged to avail themselves of the service for any problems developing, to forestall more serious medical consequences, thus losing more time from studies.



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The term of the appointed Regents is sixteen years, and terms expire March 1 of the years indicated in parentheses.

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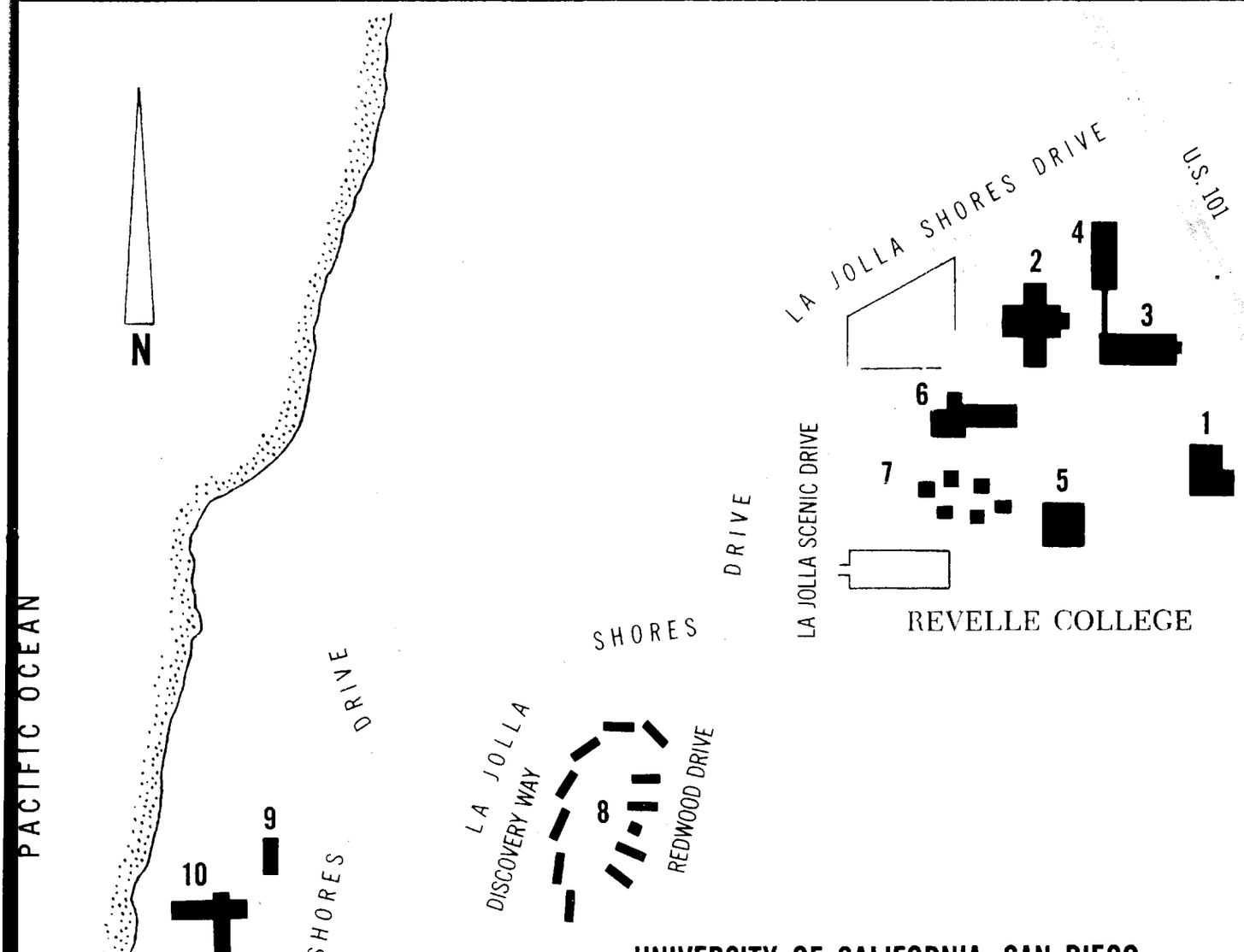

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3. BUILDING C
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5. BUILDING E
6. GENERAL SERVICES BUILDING
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John S. Galbraith
Chancellor

University of California, San Diego

General Catalogs,

1965/1966