BULLETIN
OF THE
UNIVERSITY
OF SOUTHERN
CALIFORNIA
THE GRADUATE
SCHOOL
1979-80





BULLETIN OF THE UNIVERSITY OF SOUTHERN CALIFORNIA USPS 007-820

BULLETIN OF THE UNIVERSITY OF SOUTHERN CALIFORNIA is the title of the series of bulletins describing the organization of the University and the programs and requirements of the various schools and divisions. A general bulletin, the INTRODUCTION TO THE UNIVERSITY, is intended for prospective undergraduate students. Address requests for bulletins to Bulletin Mailing, University of Southern California, Los Angeles, California 90007.

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SUMMER SESSION

COLLEGE OF CONTINUING EDUCATION

Miscellaneous Publications

BULLETIN OF THE UNIVERSITY OF SOUTHERN CALIFORNIA VOLUME 75 / NUMBER 5 / SEPTEMBER 15, 1979

Published by the University of Southern California, University Park, Los Angeles, California 90007. Second-class postage paid at Los Angeles, California. Published monthly in January, February, March, April, May, June, October, November and December and semimonthly in July, August and September.

G771.249.

8060094

BULLETIN OF THE UNIVERSITY OF SOUTHERN CALIFORNIA

THE GRADUATE SCHOOL





General Information/Degrees and Requirements/Courses of Instruction

THE COVER: The lamp of Diogenes illuminates the doorway of the Seeley W. Mudd Memorial Hall of Philosophy on the University of Southern California Campus.

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CALENDAR

FALL SEMESTER 1979

Sept. 10-15

Sept. 17-Monday

Nov. 22-24 Dec. 19-Jan. 1 Registration for fall semester

Classes begin Thanksgiving recess Christmas recess

1980

Jan. 2-Wednesday

Jan. 17—Thursday Jan. 21-30

Jan. 31—Thursday

Classes resume after Christmas recess

Fall Semester classes end

Final examinations for fall semester

Commencement

SPRING SEMESTER 1980

Jan. 31-Feb. 2

Feb. 4-Monday

Feb. 18-Monday

March 31-April 5

April 7-Monday

May 21—Wednesday

May 23-June 4

May 26—Monday

June 5—Thursday

Registration for spring semester

Classes begin

Washington's birthday, University holiday

Easter recess

Classes resume after Easter recess

Spring semester classes end

Memorial Day, University holiday

SUMMER SESSION 1980

June 13-14

June 16-Monday

June 20-21

June 23-Monday

July 4—Friday

Aug. 9-Saturday

Aug. 11-Monday

Sept. 6-Saturday

Final examinations for spring semester

Commencement

Registration, 12-week session 12-week session begins

Registration, 7-week session

7-week session begins

Independence Day, University holiday

7-week session ends

4-week session begins

12-week and 4-week sessions end

FALL SEMESTER 1980

Sept. 8-13

Sept. 15-Monday

Nov. 27-29

Dec. 22-Jan. 3

Registration for fall semester

Classes begin

Thanksgiving recess

Christmas recess

1981

Jan. 5-Monday

Jan. 20-Tuesday

Jan. 22-Feb. 2 Feb. 3—Tuesday Classes resume after Christmas recess Fall semester classes end

Final examinations for fall semester

Commencement

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GENERAL INFORMATION

The organization in 1910 of the Graduate Department of the College of Letters, Arts, and Sciences, under the supervision of a Graduate Council appointed by the President, marked the formal beginning of graduate studies at USC. On January 27, 1920, the Board of Trustees authorized the organization of the Graduate School of Arts and Sciences, which in 1923 became The Graduate School of the university. Today The Graduate School supervises all academic graduate work, but does not supervise training for professional careers in architecture, business, dentistry, education, engineering, gerontology, law, library science, medicine, music, pharmacy, public administration, and social work.

ORGANIZATION OF THE GRADUATE SCHOOL

The Dean of The Graduate School is responsible for maintaining the quality of graduate programs, recommending changes in existing policies, and administering the academic graduate programs of the several departments and schools.

The Graduate and Professional Schools Committee, consisting of members drawn from the various academic areas and professional schools, establishes overall policies for post-baccalaureate education.

On matters pertaining primarily to degrees under the jurisdiction of The Graduate School, the dean is assisted by an advisory council of representatives from the major areas of study.

LIBRARIES

The university libraries include the General Library, situated in the Edward L. Doheny, Jr. Memorial Library building, and 16 departmental libraries. Together, the libraries house 1,800,00 bound volumes and a large collection of documents and pamphlets. More than 30,000 serials are currently received. Important research collections in neighboring libraries are also available to graduate students.

THE GENERAL LIBRARY The General Library houses the reference, periodical, and circulation departments as well as special collections, the human relations area files, graduate study, College

Library, and the microtext reading room. The reference department is a central "clearinghouse" for information concerning the libraries; general reference service, bibliographic assistance, and interlibrary loans are its other principal functions. The periodicals department provides current issues of about 2,300 magazines; many of these are on open shelves.

Access to the stacks is granted to all registered students upon presentation of a student identification card. Advanced students engaged in research may request assignment of carrels, located in the stacks. Doctoral candidates working on dissertations may use cubicles on the two upper floors of the building. Books reserved for graduate courses are available in graduate study, on the second floor.

The public catalog is a complete record, except for a few special collections, of all holdings in the university libraries. Each departmental library also maintains a separate catalog of its individual holdings.

The libraries endeavor to maintain strong collections capable of supporting research in all areas in which graduate courses are offered. Many of the schools are served by departmental libraries: architecture, business administration, college, dentistry, education (which includes a curriculum library), fine arts, law, medicine, music, science, and social work. Some collections especially rich in materials for research are:

ALLAN HANCOCK FOUNDATION SCIENCE LIBRARY Based on the famous collection acquired from the Boston Museum of Natural History, the Hancock Library is especially strong in the publications of learned and scientific societies. Among the 90,000 volumes dealing with taxonomy, early scientific expeditions, and systematic biology are many rare and out-of-print works. One hundred thousand reprints and pamphlets round out the unique collection.

HOOSE LIBRARY OF PHILOSOPHY The Hoose Library of Philosophy contains more than 45,000 volumes, including many first editions as well as the definitive editions of western philosophers. The collection of secondary materials, old and new, includes extensive files of the philosophical journals of Europe and America. The library is rich in research materials of the thirteenth and fifteenth centuries, including rare manuscripts, incunabula, and other early books. Special collections have been assembled on Roger Bacon, the Jansenist movement, and the philosophy of personalism.

The Hoose Library also houses the famed Heinrich Gomperz Library, long considered the finest privately owned library on philosophy in Europe. Here, among some 11,000 volumes, exceptional strength is exhibited in materials on European philosophy from about 1700 to 1850, polarized around the Enlightenment and Romanticism. Kant, Hegel, Schopenhauer and other philosophers of comparable importance are represented by complete and nearly complete runs of first editions. Also included are 2,000 pamphlets, a number of rare journals and serials, and many important items in fields related to philosophy, especially religion, aesthetics, and philology.

THE VON KLEINSMID LIBRARY OF WORLD AFFAIRS The Rufus B. and Elisabeth S. von KleinSmid Library of World Affairs is a research library in international relations, political science, and public administration. The more than 150,000 volumes include publications of regional and international commissions, foreign governments, foundations, learned societies, and universities. There are, in addition, extensive files of foreign and domestic periodicals and newspapers, and publications and documentation of the United Nations, its affiliates, and the League of Nations. Areas of specialization are international organization and international law; regions of concentration are Latin America, the Middle East, and the Soviet Union.

AMERICAN LITERATURE COLLECTION Established specifically to provide research materials in American literature since 1850, the American literature collection numbers more than 30,000 volumes. First and variant editions, association items, and critical works are well represented, in addition to several thousand letters, manuscripts, and miscellaneous source materials.

CINEMA COLLECTION The cinema collection, located in the Department of Special Collections, includes historical and current material on all aspects of American and foreign films. Approximately 10,000 books and journals are supplemented by screenplays, unpublished and manuscript material, tapes, and still photographs.

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FEUCHTWANGER MEMORIAL LIBRARY The Feuchtwanger Memorial Library contains more than 25,000 volumes assembled by the German novelist, Lion Feuchtwanger. It is especially strong in German and French literature of the eighteenth and nineteenth centuries. A special feature is the collection of first editions and definitive editions of major twentieth century European writers, many of them inscribed or association copies. Holdings also include important early editions of the classics, incunabula, Bibles and biblical commentaries, Judaica, and special reference books.

HUMAN RELATIONS AREA FILES The human relations area files are a collection of source materials, mostly ethnographic in context. These materials are coded and filed by topic so that information on a particular culture, or a single topic within a cross-cultural sample, can be retrieved rapidly and accurately by the research worker in the behavioral sciences.

ALLAN HANCOCK FOUNDATION

The research facilities of the Allan Hancock Foundation, established in 1939, are open to qualified graduate students. In addition to the Allan Hancock Foundation Science Library, already mentioned, the extensive research facilities provide for advanced study in the broad field of marine biology, and more particularly in invertebrate and vertebrate zoology, marine ecology, algology and phycology, marine microbiology, ultrastructure, geology, and paleontology.

The foundation includes an extensive collection of marine invertebrates and algae, and is a founding member of the Association of Systematics Collections. Many other divisions of the University use the facilities of the Allan Hancock Foundation for related research work. The foundation is generous in providing for the publication of research studies under its auspices.

ORGANIZATION FOR TROPICAL STUDIES (OTS)

USC is a charter member of the Organization for Tropical Studies, Inc. (OTS), a nonprofit educational corporation organized to develop and assist programs of education and research relating to the tropics and to make them available to all educational institutions. OTS has placed initial emphasis on course work and research in environmental studies. The central OTS teaching and research facilities are located on the campus of the Universidad de Costa Rica in San Jose, Costa Rica, with field stations maintained in appropriate environments throughout the republic.

During 1979-80, a series of advanced biology courses will be presented.

For additional information write: Executive Director, Organization for Tropical Studies, North American Office, P.O. Box DM, Duke Station, Duke University, Durham, North Carolina 27706.

CATALINA MARINE SCIENCE CENTER

A program of courses in the marine sciences is offered at the Catalina Marine Science Center by USC. Admission to these courses may be obtained by post-graduate and graduate scholars, in addition to a Marine Semester in residence at Catalina for undergraduate students of exceptional promise and with long-range interests in the marine sciences. Located on Santa Catalina Island and provided with a running sea water system, the laboratories offer an unusual spectrum of academic training; course offerings include marine invertebrate zoology, marine botany, marine ecology, marine ichthyology, marine protozoology, comparative invertebrate physiology, oceanography, plankton ecology, algal physiology, invertebrate embryology, microfauna, electrophysiology, and independent and directed research.

For information on current and future course programs, write to Robert Given, Director, Catalina Marine Science Center, Santa Catalina Island, California 90704.

COMPUTER FACILITIES

UNIVERSITY COMPUTING CENTER The main university computing facilities are operated by University Information Processing. The computers themselves are housed at the University Computing Center, 1020 West Jefferson Boulevard. User services are housed in Stonier Hall on the main campus, and students and staff are requested to inquire there about the facilities available for their use. This academic computing facility features an IBM 370/158 computer system providing local and remote batch processing, plus time-sharing services to USC students and faculty. Supporting the model 158 are IBM tabulating and card punching equipment, and a knowledgeable staff. Numerous model 158 software routines are available for such applications as statistical analysis, simulation, and data management. The model 158 has 2,000,000 bytes of memory. A large number of remote terminals are available for use by students and faculty.

ENGINEERING COMPUTER LABORATORY The Engineering Computer Laboratory located in Powell Hall, includes a general-purpose digital and graphics computer system. The major elements of the system include a DEC KI-10 with 256K words of memory, 8 disks, 2 tapes and a minicomputer multiplexor. In addition to the KI-10, the lab has an IBM 360/44 with 128,000 bytes of memory and three disk storage drives. The University has purchased a DEC KL-10 with 512K words of memory to augment the KI-10.

Graphics is performed on a DEC GT-42 with 8,000 bytes of memory. The GT-42 operates both as a stand-alone computer and as an input-output terminal to the KI-10.

The DEC PDP-11 multiplexor and an OPTRAN infrared data link enable the 360/44 and KI-10 to communicate with the 370/158 at the University Computing Center, a PDP-11 at the biomedical engineering computer facility, and an HP-2100, PDP 11/40, and PDP 11/10 in the Image Processing Laboratory. The KI-10 is connected to an international computer network (ARPANET) over a high-speed data link, permitting use of large computers and specialized systems at other installations.

The laboratory is operated on an open-shop basis, making the computers available for student and faculty research. FM recording equipment makes possible the use of graphics equipment for automatic synthesis of mathematical models to match recorded data in such diverse areas as industrial process control, and the study of physiological and psychological systems.

IMAGE PROCESSING INSTITUTE The Image Processing Institute, located in Powell Hall, is a research unit and is involved in basic and applied studies in the fields of computer and laser applications to image processing. The institute maintains close academic ties with the Department of Electrical Engineering and the Department of Computer Science. The institute actively pursues and directs graduate students in research leading to the Ph.D.

The Image Processing Institute has been in existence since 1971 and represents one of the finest University facilities available for research in the areas of digital signal processing of multidimensional data. The facilities include hardwired connection to the Engineering Computer Laboratories DEC KI-10 and KL-10 facility, the ARPANET, and HP-2100 digital computer and associated peripherals, a DEC 11/40 and DEC 11/10 minicomputer network, a precision-scanning microdensitometer, a flying spot scanner, a facsimile color system, two COMTAL real-time digital video image display systems, several hundred high-speed digital logic modules, two closed-circuit television systems, gas lasers and associated optical equipment, photographic laboratory facilities, and approximately 30 time-share terminals to effect interactive digital image processing algorithms.

Research is centered around the processing of visual and other multidimensional information.

Current research projects include: digital television bandwidth reduction, the statistical analysis of images, digital image restoration, pattern recognition, holographic and coherent optical processing, biomedical image processing, image extraction systems, image understanding systems, radar image processing, artificial intelligence applied to imagery, data structures applied to imagery, and language structures applied to imagery.

INFORMATION SCIENCES INSTITUTE The Information Sciences Institute, located approximately 15 miles from the campus at Marina del Rey, is a research unit of the School of Engineering and is involved in basic and applied studies in the fields of computer and communication sciences. The institute maintains close academic ties with the school, particularly with the Computer Science Department and the Department of Electrical Engineering; it provides a number of special research assistantships and it is possible for advanced students to carry on their Ph.D. research by becoming involved in the institute's programs.

In support of its many programs, ISI has powerful in-house computer capabilities: an active node on the ARPA Network; two large-configuration PDP-10's with a TENEX paging system; a Xerox Graphics Printer (XGP) system that provides a high-quality document printing capability; an SPS-41, a general-purpose signal-processing machine used in the Network Secure Speech project; and two PDP-11's, one to drive the SPS-41 and one to drive the XGP's; an MLP-900, a developmental large-scale processor capable of swapping user-written microcode that has been integrated into the PDP-10 TENEX system; and an extensive user-oriented CRT terminal system.

GRADUATE WORK IN THE SUMMER SESSIONS

Graduate students who must do a part of their work during USC's summer sessions will find a wide range of graduate courses. Summer work is regularly accepted for advanced degrees or for teaching credentials. Each year USC invites a number of distinguished visiting professors to join the summer session faculty.

Experience has shown that because of the intensive character of graduate work it is usually advisable for graduate students to limit their programs to something less than the maximum permitted. A more comprehensive statement on this subject will be found in the Summer Session bulletin.

INTERNATIONAL SUMMER SESSION

Each summer USC, through the Division of International Programs of the College of Continuing Education, offers a number of programs abroad. The purpose of these programs is to provide opportunities for educational experiences in relevant foreign environments. These special programs offer travel study opportunities at reasonable cost. Many of these programs may be of interest to graduate students. Information concerning these programs, which may change from summer to summer, may be obtained from Constance Horak, Division of International Programs, ADM 356, 741-5356.

The Master of Liberal Arts Degree Program offers a course on The Arts in Modern Britain each summer in conjunction with Cambridge University. The course is residential at Madingley Hall, Cambridge University's Tudor-Era headquarters for extramural study. Interested students should contact Dr. Barbara MacEachern, ADM 355, 741-7500, for details.

ALUMNI MEMBERSHIP

All graduates of the University of Southern California and graduates of other institutions who have completed at least one semester of residence in graduate status at USC are eligible for membership in the General Alumni Association. The cost of membership is \$5 a year, which includes full alumni privileges, such as the regular alumni publications, athletic ticket priority, and other privileges. Membership cards may be secured from the Alumni Office.

MEMBERS OF THE GRADUATE SCHOOL BY COURTESY

Members by courtesy are visitors holding the Ph.D. degree or equivalent degrees from this or other universities. Such visitors may inquire at the office of the dean of The Graduate School for auditing and library privileges without cost for stated periods of time.

FINANCIAL AID, TUITION, AND STUDENT SERVICES

FINANCIAL AID

USC's financial aid program includes fellowships, assistantships, tuition awards, loans, and parttime employment. Students may apply for one or more kinds of aid, depending on need and qualifications. One criterion in the selection of some fellowship or tuition award recipients is financial need. If the applicant is also applying through the USC Financial Aid Office for a National Direct Student Loan or a Federally Insured Student Loan, a financial needs analysis form available in that office must be completed. Contact the Financial Aid office, SAS 316, telephone (213) 741-6770, for additional information.

Loans

All loans except the Phi Beta Kappa Graduate Loan are handled by the Office of Financial Aid; interested students should write or call that office for information.

The Phi Beta Kappa Loan Fund was established in 1933 by the USC Chapter of Phi Beta Kappa for students regularly enrolled in The Graduate School and carrying full-time programs in courses for graduate credit. The loan cannot exceed \$100 and must be used for university tuition and fees. Applications for loans must be approved by the dean of The Graduate School and be submitted to a loan counselor in the Office of Financial Aid.

Employment

Although the university does not encourage students to attempt to earn enough to meet all expenses while in school, students may apply for on-campus or off-campus part-time employment opportunities with the student employment counselor in the Office of Financial Aid. The Office of Personnel, Room 104, Parkview Building, lists full-time positions for students and student spouses. Some of the full-time positions offer tuition to the employee and his or her dependents.

FELLOWSHIPS, ASSISTANTSHIPS, AND AWARDS

Fellowships

Graduate students may direct fellowship inquiries to the dean of The Graduate School. The closing date for applying is February 1.

BEAUMONT FELLOWSHIPS A special grant from the Louis D. Beaumont Foundation provides fellowships for graduate students who are working toward advanced degrees offered through The Graduate School. These fellowships, for which applications in the humanities will be given special consideration, provide tuition and a stipend of \$3,000. Applications should be filed with The Graduate School not later than February 1.

GRADUATE TUITION AWARDS These awards, available to full-time students working for degrees under the jurisdiction of The Graduate School, cover a portion of all normal tuition charges. Applications should be filed with The Graduate School not later than February 1.

HAYNES RESEARCH FELLOWSHIPS These fellowships, provided by the John Randolph and Dora Haynes Foundation, are for final-year doctoral candidates in the social sciences. They provide tuition and a stipend of \$4,000. Special applications should be filed with The Graduate School not later than March 15.

HAYNES FIRST-YEAR FELLOWSHIPS The Haynes Foundation provides a number of non-renewable fellowships for first-year graduate students in the social sciences. The stipend is \$2,000. Application should be made not later than February 1.

RAPHAEL HERMAN AND NORMAN B. HERMAN FELLOWSHIPS The objective of these fellowships is the training of men and women seeking degrees in international relations. They provide tuition and a stipend of \$1,500-\$3,000. Applications should be filed with The Graduate School not later than February 1.

HUGHES AIRCRAFT COMPANY FELLOWSHIPS Master's, engineer, and doctoral fellowships are awarded on a competitive basis to qualified individuals for study in electrical, mechanical, and aerospace engineering, computer science, physics, or mathematics. For information concerning the master's and engineer fellowships, consult the bulletin of the School of Engineering.

Up to six awards are available to non-employees for the Howard Hughes doctoral fellowships and up to ten awards for individuals within the company. Applicants must have completed at least one full year of graduate study and be highly qualified to do advanced work. Applications may be obtained from the Hughes Aircraft Company, Scientific Education Office, P.O. Box 90515, Los Angeles, California 90009.

MORKOVIN FELLOWSHIP Named in memory of the university's late professor of speech and drama, Dr. Boris V. Morkovin and his wife, Helen Buckman Morkovin, this fellowship aims at continuing the life work of Dr. Morkovin by giving opportunities to young persons for advanced studies and research in the interdisciplinary fields dealing with language development: linguistics, audiology, perceptual and communicative aspects of behavior and personality development, and allied fields. Research in language acquisition by auditorily handicapped preschool children and by young children whose cognitive abilities are impaired by poverty, cultural conflict, or linguistic interference, will be especially encouraged. It provides tuition and a stipend up to \$3,600. Applications should be filed with The Graduate School not later than February 1.

OAKLEY FELLOWSHIPS The Wesley and Isabel Oakley Educational Fund provides fellowships providing tuition and a stipend of \$3,000 for graduate students who are working toward advanced degrees through The Graduate School. Special consideration is given to applicants in the humanities. Applications should be filed with The Graduate School not later than February 1.

UNITED EUROPEAN AMERICAN CLUB FUND Established by the United European American Club, an international organization to promote harmony and understanding between nations, the fund will provide support for a year's study at the University of Vienna. For further information, contact the Chairman, Department of German.

NORMAN TOPPING STUDENT AID FUND This fund is a unique aid program which provides full tuition grants for high potential, low income students through a joint effort of the university student body and the USC Associates. It is for undergraduate and graduate students, and its goal is to encourage students to work toward the betterment of their communities. The award is based on financial need and commitment to community involvement. Each recipient is required to volunteer 20 hours each semester in some worthy community work. Application forms may be obtained from the director of the Topping Fund, STU 425. The application deadline is February 28.

CALIFORNIA STATE GRADUATE FELLOWSHIPS Students who are residents of California and who can demonstrate financial need may apply for tuition fellowships from the California Student Aid Commission. Application forms may be obtained from The Graduate School or from the California Student Aid Commission, 1410 Fifth Street, Sacramento, California 95814.

Assistantships

A number of teaching and laboratory assistantships are awarded each year to graduate students on the basis of exceptional scholastic accomplishment, promise, and competence for service in the departments of the University.

For the academic year 1979-80, stipends for half-time teaching and laboratory assistantships range from \$4,707-\$5,211, depending upon the qualifications of the applicant. Half-time teaching and laboratory assistants receive, in addition to their stipends, full tuition remission for the academic year and the summer session following their service in this capacity. There are some teaching assistantships that are less than half-time. These positions carry stipends and tuition remission benefits in proportion to the regular scales.

A limited number of research assistantships are available in many departments having government, foundation, business, and industrial research contracts.

Application forms for assistantships may be obtained directly from the department to which the student wishes to apply. Applications are to be on file by March 15.

Awards

HARRY J. DEUEL, JR., AWARD IN BIOCHEMISTRY Through the generosity of friends, colleagues, and former students of the late Dr. Harry J. Deuel, Jr., Professor of Biochemistry and Nutrition (1929-1956) and Dean of The Graduate School (1949-1956), the Harry J. Deuel, Jr., Award in Biochemistry was established. This award is granted annually at commencement to the student receiving the Ph.D. degree in biochemistry who, during graduate studies, has demonstrated to the greatest extent the qualities of character, scholarship, and integrity cherished by Dr. Deuel.

The award is administered by the Deuel Award Committee; the chairman of the Department of Biochemistry is the chairman of the committee. The committee determines the nature of the annual award. If in any year there is no suitable candidate, the committee has the authority to make no award.

EDWARD W. MOSES GRANT This award is available in amounts up to \$1,200 for graduate and undergraduate students who demonstrate talent in creative writing. Applications should be submitted to the Department of English.

SYLVIA AND IRVING WALLACE POETRY PRIZE This award is under the auspices of the Academy of American Poets for a poem or group of poems by a student at USC. It is conferred by the Department of English at the end of the spring semester.

TUITION AND FEES

Tuition is payable in advance unless special arrangements are made for deferred payments as described below. Tuition is the same for resident and nonresident students. Registration is completed when the fee bill has been validated.