

---

# Ostrow School of Dentistry of USC



*Dentistry students “fight on” at the naming ceremony for the Ostrow School of Dentistry of USC, which recently received a \$35 million gift from alumnus and honorary trustee Dr. Herman Ostrow. The donation has provided resources to renovate clinical facilities, bring in new faculty members, support research, enhance service programs in downtown Los Angeles and attract the best students through scholarships.*

**F**ounded in 1897, the Ostrow School of Dentistry of USC continues a longstanding tradition as one of the nation’s top dental schools. The Ostrow School of Dentistry maintains a global reputation for excellence in clinical education by providing students with unique, intensive clinical experiences using the most advanced techniques and technologies in the field. Graduates form a tightly knit community of proud alumni, provide top-notch patient care, conduct world-class research and lead the oral health field.

The core of the Ostrow School of Dentistry’s strength rests primarily with its expert educators. Their world-renowned expertise, combined with the school’s innovative learner-centered curricula, provides students with the strong clinical education they need in order to become the next generation of great oral health professionals. The school’s traditional curricula include the Doctor of Dental Surgery program, the baccalaureate in dental hygiene program and several postdoctoral specialty programs: endodontics, general practice residency, oral and maxillofacial surgery, orofacial pain and oral medicine, orthodontics, pediatric dentistry, periodontology and prosthodontics. Other available degrees include combined D.D.S./M.B.A. and D.D.S./M.S. programs, gerontology programs, master’s and Ph.D. opportunities in the craniofacial biology program, and an advanced standing program for international dentists.

The Ostrow School of Dentistry is a valuable facet of one of the country’s leading private, research-intensive universities. Consistently at the top of the list for research funding among all dental schools, the school’s celebrated status as a dental and craniofacial research powerhouse offers students many opportunities. Students enrich their education through activities in the laboratory and bolster their clinical talents with strong scientific foundations.

The Ostrow School of Dentistry and its students also benefit from its location within the city of Los Angeles. With one of the richest traditions of community service of any dental school, the school creates and maintains partnerships that not only provide valuable clinical experiences to the students but also help the most vulnerable members of society improve their oral health. Serving the surrounding community, whether in the school’s dental clinics or at community outreach sites throughout Los Angeles and Southern California, helps students develop not only their clinical proficiency but also their skills in treating all members of an incredibly diverse community with care and compassion.

**Ostrow School of Dentistry of USC**  
Dentistry Room 203  
(213) 740-3124  
[dentistry.usc.edu](http://dentistry.usc.edu)

#### Administration

Avishai Sadan, D.M.D., *Dean*

Mahvash Navazesh, D.M.D., *Associate Dean of Academic Affairs and Student Life*

Sigmund H. Abelson, D.D.S., *Associate Dean of Clinical Affairs*

Rick Valdivia, C.P.A., *Associate Dean of Finance*

Yang Chai, D.D.S., Ph.D., *Associate Dean of Research*

Roseann Mulligan, M.S., D.D.S., *Associate Dean of Community Health Programs and Hospital Dentistry and Chair, Division of Public Health and Pediatric Dentistry*

Ilan Rotstein, D.D.S., *Associate Dean of Continuing Education and Chair, Division of Endodontics, Oral and Maxillofacial Surgery and Orthodontics*

Casey Chen, D.D.S., Ph.D., *Chair, Division of Periodontology, Diagnostic Sciences and Dental Hygiene*

Richard Kahn, D.D.S., Ph.D., *Chair, Division of Restorative Sciences*

Paul Denny, Ph.D., *Interim Chair, Division of Biomedical Sciences*

James Gordon, M.A., M.Ed., Ed.D., *Associate Dean and Chair, Division of Biokinesiology and Physical Therapy*

Florence Clark, M.S., Ph.D., *Associate Dean and Chair, Division of Occupational Science and Occupational Therapy*

#### Faculty

*G. Donald and Marian James Montgomery Professor in Dentistry:* Avishai Sadan, D.M.D.

*George and Mary Lou Boone Chair in Craniofacial Molecular Biology:* Yang Chai, D.D.S., Ph.D.

*Don and Sybil Harrington Foundation Chair in Esthetic Dentistry:* Pascal Magne, D.M.D., Ph.D.

*Rex Ingraham Chair in Restorative Dentistry:* Richard L. Kahn, D.D.S.\*

*Sykes Family Chair in Pediatric Physical Therapy, Health and Development:* Linda Fetters, Ph.D.

*Wayne G. and Margaret L. Bemis Professor of Endodontics:* James H.S. Simon, D.D.S.

*Ralph W. and Jean L. Bleak Professor of Restorative Dentistry:* Winston Wan-Li Chee, B.D.S.

*Charles M. Goldstein Professor of Community Dentistry:* Roseann Mulligan, D.D.S., M.S.

*G. Donald Montgomery Professor of Dentistry:* Sigmund H. Abelson, D.D.S., MACM

*USC Associates Assistant Professor of Dentistry:* Michael L. Paine, D.D.S., Ph.D.

*Professors:* Yang Chai, D.D.S., Ph.D.\*; Chih-Kuang Casey Chen, D.D.S., Ph.D.; Glenn Clark, M.S., D.D.S.; Paul C. Denny, Ph.D.\*; Tina F. Jaskoll, Ph.D.; Stanley F. Malamed, D.D.S.; Michael Melnick, D.D.S., Ph.D.; Cedric Minkin, Ph.D.; Roseann Mulligan, M.S., D.D.S.; Mahvash Navazesh, D.M.D.; Pragna Patel, Ph.D.; Ilan Rotstein, D.D.S.; Avishai Sadan, D.M.D.; Michael L. Schneir, M.S., Ph.D.; Harold C. Slavkin, D.D.S.; Jorgen Slots, M.B.A., D.D.S., Ph.D., D.M.D.; Malcolm L. Snead, D.D.S., Ph.D.

*Associate Professors:* John W. Beierle, Ph.D.; Winston Wan-Li Chee, B.D.S.; George C. Cho, D.D.S.; Steven D. Goodman, Ph.D.; Richard L. Kahn, D.D.S.\*; Robert G. Keim, D.D.S., Ed.D.; Anh Dao Le, D.D.S., Ph.D.; Ralph L. Leung, M.S., D.D.S.; Pascal Magne, D.M.D., Ph.D.; Janet Oldak, Ph.D.; Michael Paine, B.D.S., Ph.D.; Sandra K. Rich, M.P.H., Ph.D.; Glenn Sameshima, D.D.S., Ph.D.; Songtao Shi, D.D.S., Ph.D.; Arnold Tiber, D.D.S., Ph.D.; Karoline B. Waldman, M.S.; Homayoun H. Zadeh, D.D.S., Ph.D.

*Associate Professor (Librarianship):* John P. Glueckert, M.L.I.S.

*Assistant Professors of Dentistry:* Ruchi Bajpai, Ph.D.; Sillas Duarte Jr., D.M.D.; Amy Merrill-Brugger, Ph.D.; Jin Ho Phark, D.M.D.; Parish P. Sedghizadeh, D.D.S.

*Professors of Clinical Dentistry:* Jane Forrest, R.D.H., Ed.D.; Michael Jorgensen, D.D.S.; Diane Melrose, B.S.D.H.; Michael J. Mulvehill III, M.B.A., D.D.S.\*; Hessam Nowzari, D.D.S.; Alvin Rosenblum, D.D.S.; James H.S. Simon, D.D.S.; Dennis-Duke R. Yamashita, D.D.S.

*Associate Professors of Clinical Dentistry:* Loris Abedi, D.D.S.\*; Sigmund Abelson, D.D.S., MACM; Gardner Beale, D.D.S.; Jucheng Chen, D.D.S., Ph.D.; Joyce Galligan, R.N., D.D.S.; Ripsik Gukasyan, D.D.S.; Nora Haghparast Hassas, D.D.S.; Michelle Ikoma, D.D.S.; Kian Kar, M.S., D.D.S.; James W. Kim, D.D.S.; Niel Nathason, M.P.H., M.A.; Randy Phillips, D.D.S.; Jose Polido, D.D.S.; Ramon Roges, D.D.S.; Eddie Sheh, D.D.S.\*; Donna Smith, R.D.H., M.S.Ed.; Richard Udin, D.D.S.; Stephen Yen, D.M.D., Ph.D.

*Assistant Professors of Clinical Dentistry:* Tae Ahn, D.D.S.\*; Lupe Arevalo, R.D.H.\*; Kim Austin, D.D.S.; Jessica De Bord, M.S.D., D.D.S.; Laura Elizondo, D.D.S.; Reyes Enciso, Ph.D.; Sharon Faust, D.D.S.; Richard Green, M.S.Ed., D.D.S.; Veronica Greene, M.P.H., D.D.S.; Julie Jenks, M.S., M.P.H., D.D.S.; David Kang, D.D.S.; Boris Keselbrenner, D.D.S.; Tae Kim, D.D.S.; Satish K.S. Kumar, M.D.S.; Janet Lent, D.D.S.; Thomas Allen Levy, M.S., D.D.S.; Richard S. Lin, D.D.S.; Ali Ostadali Makhmalbaf, D.D.S.; Afsaneh Matin, D.D.S.; Karen Matsumura-Lem, R.D.H., D.D.S.; Holly Moon, M.S., D.D.S.; John Morzov, D.D.S.; Eleanor Nielsen, B.S.D.H.; Andrea C. Pinnick, D.D.S.; Mohamad Ali Reshad, M.Sc.; Saravanan Ram, M.D.S.; Piedad Suarez, D.D.S.; Santosh Sundaresan, D.D.S.; Thomas Tanbonliang, Jr., D.D.S.; Antonia Teruel, D.D.S., Ph.D.; Chieng Tu, R.D.H.\*; Jacqueline Venturin, D.M.D.; Dinh L. Vo, D.D.S.; Christina Wong, D.D.S.

*Clinical Professors:* Ralph B. Allman, M.S., D.D.S.; Calvin Lau, M.B.A., D.D.S.; Gayle Macdonald, Ph.D.

*Clinical Associate Professors:* Peter Cancellier, D.D.S.; Barbara D. Edwards, R.D.H.; John Kishibay, D.M.D., Ph.D.; Bach Le, D.D.S., M.D.; James Mah, M.S., D.D.S., D.M.Sc.; Anthony Park, D.D.S.; Paul Parminter, D.D.S.; Hovhanness Shnorhokian, D.M.D., Ph.D.; Arman Torbati, D.D.S.

*Clinical Assistant Professors:* Mainul Ahsan, Ph.D.; Vartuhi Avanesian, D.D.S.; Theodore Burnett, D.D.S.; Juan Camerena, D.D.S.; Brent Fung, D.D.S.; Alon Frydman, D.D.S.; Ellen M. Grady, B.A.; Helia Hooshangi, D.D.S.; Clara Kim, D.M.D.; Daniel Kolzet, D.M.D.; Reza Mahmoudiani, D.D.S.; Joel McPherson, D.D.S.; Lisa Oshiro, R.D.H.; Cyril Pandarakalam, B.D.S., M.D.S.; Narendranath Ravindranath, Ph.D.; Lucille Rotstein, B.Ch.D.; Daniel Schecter, D.D.S.; Tota Shimizu, M.S.Ed., D.D.S.; Marlene Talley, D.D.S.; Jettie Uyanne, D.D.S.; Suzanne Wenzlaff, D.D.S.; Kiyomi Yamazaki, D.D.S., Ph.D.

*Clinical Instructors:* Linda Brookman, R.D.H.; Alfred Friedman, D.D.S.; Joan Howanitz, M.S., D.D.S.; Shahrok Jedian, D.D.S.; Senovita Lopez, R.D.H.; Gerald McClellan, D.D.S.; Michaela Nguyen, R.D.H.; Michael Rabinovici, D.D.S.; Carlos Sanchez, R.D.H.; Gail Stewart, M.A.; Arthur Womack, D.D.S.; Eugene Zakaryan, D.D.S.

*Research Professor:* Margarita Zeichner-David, Ph.D.

*Research Assistant Professors:* Matthew K. Lee, M.D.; Yan Zhou, Ph.D.

*Distinguished Professor Emeritus:* Clifton O. Dummett, M.Sc.D., M.P.H., D.D.S.

\*Recipient of university-wide or school teaching award.

### Degrees Offered

The Ostrow School of Dentistry awards the following degrees: the Bachelor of Science in Dental Hygiene; the Doctor

of Dental Surgery; the Doctor of Dental Surgery/Master of Business Administration; the Doctor of Dental Surgery/Master of Science in Gerontology; the Advanced Periodontology Certificate/M.S., Craniofacial Biology; Advanced Orthodontics Certificate/M.S., Craniofacial Biology; Advanced Dental Education Certificate programs

in Endodontics, Oral and Maxillofacial Surgery, Oral Facial Pain and Oral Medicine, Pediatric Dentistry, Periodontology, and Prosthodontics; Master of Science in Craniofacial Biology; Doctor of Philosophy in Craniofacial Biology. The school also offers a minor in craniofacial and dental technology.

## General Information

### The Grading System

Grades are issued by members of the faculty to indicate to students their level of achievement and to provide information to committees given the responsibility of reviewing a student's total academic record and assigning honor or deficient status.

Newly admitted students to the Doctor of Dental Surgery (D.D.S.) program, the Advanced Standing Program for International Dentists and Bachelor of Science in Dental Hygiene (B.S.) students are bound by the university grading system (excluding plus/minus grades), which is detailed in the Academic Standards section of this catalogue (page 37).

Grades used by course directors of required advanced specialty classes are: "Cr" – credit, "CrH" – credit with honors and "NCr" – no credit. Other notations appearing on the transcript are: "IP" – indicates that the grade in a course is not issued until a subsequent trimester; "IN" – incomplete work; "ICW" – incomplete clinical work; "MG" – missing grade; "W" – withdraw. Students pursuing a Master of Science or Doctor of Philosophy in Craniofacial Biology and students in dental hygiene, doctoral and international classes should refer to the Academic Standards section of this catalogue, page 37.

### Probation and Disqualification

A student evaluation policy has been developed that outlines methods by which the faculty can recognize outstanding achievements by students and identify those who have difficulty meeting the school's academic standards.

In this policy, the procedures dealing with the assignment and consequences of academic status, including academic probation and disqualification, are outlined in detail. It is hoped that the development of specific guidelines will eliminate confusion and minimize the amount of time spent in determining the student's status, thus allowing faculty and students to concentrate on their primary responsibility – the training of dental health professionals. Copies of student

evaluation policies are available in the office of Academic Affairs, DEN 218.

### *D.D.S. (includes Advanced Standing Program for International Dentists)*

A student will be placed on academic probation if a "D" or "F" final grade is received; if the student fails the National Board Part I; if the student fails to take the National Board Part I during the timeframe designated by the curriculum committee; if in the judgment of the Student Professional Performance Evaluation Committee, probation is warranted by other academic factors; if recommended by the group practice director, due to quality and/or quantity of clinical work.

A student will be placed on clinical probation upon recommendation of the group practice director if a grade of "F" is received in any of the graded categories of group practice performance, or, in the judgment of the group practice director, probation is warranted by other factors related to the delivery of health care or clinical accomplishment.

A student will be considered for disqualification if (1) a second academic probation is warranted; (2) a failing grade is not reconciled; (3) at the end of the academic year the grade point average for the preceding year is below 2.0; (4) academic probation is warranted while repeating a trimester on probation; (5) a deficiency in any area is determined by the Student Professional Performance Evaluation Committee to be insurmountable; (6) at the end of the second trimester of the Advanced Standing Program for International Dentists (ASPID), the cumulative average is less than 2.0; and (7) at the recommendation of the group practice director, based on severe and irreconcilable deficiencies relating to the quality and/or quantity of patient treatment.

### *B.S., Dental Hygiene Students*

A student will be placed on academic warning if (1) the GPA for any given Academic Time Unit (ATU) is less than 2.0; (2) a failing grade is received in a 1-unit (or less) course; (3) a grade of "D" is received in a 3-, 4- or 5-unit course. A student will be placed on

academic probation if 2 units or more of failure are recorded at the end of any trimester; if a second consecutive academic warning is warranted; or if, in the judgment of the Student Professional Performance Evaluation Committee, probation is warranted.

A student will be placed on clinical probation if a grade of "F" is received in any of the graded categories of group practice performance, or, in the judgment of the group practice director, probation is warranted by other factors related to the delivery of health care or clinical accomplishment.

A student will be considered for disqualification if (1) a third probation is warranted at the end of any trimester; (2) a failing grade is not reconciled; (3) at the end of the academic year the grade point average for the preceding year is below 2.0; (4) academic probation is warranted while repeating a trimester on probation; and (5) a deficiency in any area is determined by the Student Professional Performance Evaluation Committee to be insurmountable. In addition to the Dental School evaluation policy (which evaluates courses taken in the Dental School), students in the Dental Hygiene Program are also bound by the university's academic status requirements.

### *Advanced Specialty Students*

A student will be placed on academic probation if a failing grade is received in any course or if, in the judgment of the program director, a student's performance warrants such status due to academic or other factors. A student may be disqualified if the stipulations of a probationary period are not met by the required deadline, a failing grade is not reconciled in the period specified by the course director, or if a deficiency in any area is acquired which is determined by the program director to be insurmountable. A student who is placed on academic probation a second time can continue in the program only with the approval of the program director and the Advanced Student Professional Performance Evaluation Subcommittee.

### Honor Status

The Ostrow School of Dentistry recognizes excellence in achievement by assigning special honor status during the course of study and by presentation of awards upon graduation.

#### Dean's List

Students who complete all course work by a prescribed deadline and earn a grade point average of 3.5 or above for a trimester are placed on the Dean's List. Students shall not be placed on the Dean's list if they are on deficient academic status during that trimester (i.e., academic probation and continued academic probation).

#### Omicron Kappa Upsilon Honor List

The local chapter of Omicron Kappa Upsilon (OKU), a national dental honor fraternity recognizes the top 10 percent of each doctoral dental class at the end of each academic year (August) by including these students on the OKU Honor List. The determination of the top 10 percent is based on a yearly GPA. It should be noted that placement on the OKU Honor List has no relationship to membership in OKU, which is based on overall academic achievement and professional development.

#### Graduation Awards

There are numerous awards made each year at graduation to recognize excellence in members of the graduating doctoral, dental hygiene and ASPID classes. A complete listing is available at the Ostrow School of Dentistry.

### Voluntary Withdrawal/Leave of Absence

The Ostrow School of Dentistry recognizes that in some special instances it may be necessary or beneficial for a student to interrupt or discontinue dental education. A student wishing to withdraw from school or request a leave of absence must contact the Office of Academic Affairs for procedures to be followed. An approved leave of absence will not be granted for more than one year.

Students at the School of Dentistry who have not been formally dropped by the school, are considered enrolled each term unless they have submitted a letter of intent to withdraw. A student's verbal indication that he or she intends to withdraw or failure to settle a fee bill are not sufficient to eliminate the student from class rosters. Final course grades will be collected for students who do not have a letter of intent to withdraw on file with the Office of Academic Affairs.

A student who withdraws at any time during the first three weeks of a trimester will receive no grades for enrolled courses. A student who withdraws after three full weeks of an Academic Time Unit (ATU) will receive a mark of "W" for all enrolled courses not

completed. Withdrawal is not permitted after the 12th week of a trimester.

### Family Educational Rights and Privacy Act

The University of Southern California recognizes and acts in full compliance with regulations set in accordance with the Family Educational Rights and Privacy Act of 1974 (The Buckley Amendment). A student may have access to all records about him or her maintained by the university except those considered confidential under the act. Students of the School of Dentistry wishing to review records or to appeal for a change in those records should contact the Ostrow School of Dentistry of USC Registrar. A small charge may be made to cover the time and costs of duplication of the record.

### Tuition and Fees (Estimated)

Tuition at the Ostrow School of Dentistry is charged on a flat fee basis for enrollment in the regular degree and advanced certificate programs of the school. Exceptions do not apply to students who have courses waived based on their prior education. In such cases, students are charged the standard flat fee for the program in which they are enrolled.

Auditors pay the regular tuition rate. Auditors are not required to participate in class exercises (discussions and examinations); they receive no grades or credit.

The information outlined here is for Ostrow School of Dentistry fees and tuition deposits only. For information about Ostrow School of Dentistry tuition and university fees, refer to the Tuition and Fees section of this catalogue, page 42. The university reserves the right to assess new fees or charges as it may determine.

#### Processing Fee (not refundable):

Domestic applicants.....	\$85.00
Graduates of foreign dental schools or students requiring a student visa ....	145.00
Commitment Deposit (not refundable)	
Dentistry.....	1,500.00
Dental Hygiene .....	500.00
International Dental and Advanced .....	1,500.00
Pre-Tuition Payment (refundable in accordance with the refund policy).....	1,500.00

Mandatory Fees (School of Dentistry fees only; for other fees, refer to the Tuition and Fees section of this catalogue.)

CDA Dues .....	10.00
Doctoral dental and Advanced Standing Program for International Dentists students only; spring only.	
ASDA Dues .....	70.00
Doctoral dental program and Advanced Standing Program for International Dentists students only; fall only.	

### Special Fees

Transcript Fee.....	10.00
Gown Usage Fee .....	165.00
Disability Insurance (Doctoral, Advanced Standing Program for International Dentists and Advanced Certificate) ....	108.00
Pagers.....	85.00
Scrubs (first year only) .....	210.00

### Student Issue

Figures shown below are approximate. The School of Dentistry reserves the right to change fees at any time.

#### D.D.S. Program

1st Year	Instruments and supplies.	\$7,389.00
	IMS Fee .....	4,191.00
	Textbooks .....	4,329.00
2nd Year	Instruments and supplies....	4,277.00
	IMS Fee .....	4,191.00
	Textbooks .....	2,419.00
3rd Year	Instruments and supplies.....	226.00
	IMS Fee .....	4,191.00
	Textbooks .....	391.00
4th Year	Instruments and supplies.....	323.00
	IMS Fee .....	2,794.00
	Textbooks .....	505.00

#### Advanced Standing Program for International Dentists

##### Incoming

(Su 2011)	Instruments and supplies.....	\$6,021.00
	IMS Fee .....	1,397.00
	Textbooks .....	0.00
1st Year	Instruments and supplies.....	823.00
	IMS Fee .....	4,191.00
	Textbooks .....	391.00
2nd Year	Instruments and supplies.....	335.00
	IMS Fee .....	2,794.00
	Textbooks .....	505.00

#### Advanced Dentistry Programs

##### IMS Fee

Endodontics, 1st Year.....	\$2,379.00
Endodontics, 2nd Year .....	2,038.00
Orthodontics, 1st Year .....	2,379.00
Orthodontics, 2nd Year .....	1,997.00
Orthodontics, 3rd Year .....	600.00
Pediatric Dentistry,	
1st Year .....	2,038.00
Pediatric Dentistry, 2nd Year .....	0
Periodontology, 1st Year.....	2,188.00
Periodontology, 2nd Year .....	2,188.00
Periodontology, 3rd Year .....	750.00
Prosthodontics, 1st Year .....	2,379.00
Prosthodontics, 2nd Year .....	1,997.00
Prosthodontics, 3rd Year .....	600.00
Orofacial Pain and Oral	
Medicine, 1st Year .....	1,997.00
Orofacial Pain and Oral	
Medicine, 2nd Year .....	600.00

*Dental Hygiene Program*

1st Year	Instruments and supplies.....	\$2,843.00
	IMS Fee .....	1,493.00
	Textbooks .....	1,627.00
2nd Year	Instruments and supplies.....	437.00
	IMS Fee .....	982.00
	Textbooks .....	840.00

**Financial Aid**

Detailed information concerning financial aid programs available to dental students can be obtained by contacting the Ostrow School of Dentistry of USC Office of Financial Aid at (213) 740-2841 or uscsdfa@usc.edu.

## Undergraduate Degree

### Bachelor of Science in Dental Hygiene

The mission of the USC Department of Dental Hygiene is to educate and prepare dental hygiene leaders for careers in a diverse and changing health care environment. Implicit in this is a desire to provide a liberal education as well as outstanding clinical experiences. The baccalaureate dental hygiene program is a combination of dental and dental hygiene sciences, supporting sciences and general education.

The curriculum reflects the core values of the profession in private and public health settings. The program is committed to creating a humanistic, educational environment that will facilitate the development of responsible, ethical, oral health professionals who are sensitive to the patient needs and competent in the dental hygiene process of care.

Educational and clinical services provided by dental hygiene students include dental health education, patient assessment, disease prevention and non-surgical periodontal therapy for a diverse population of patients. The program strives to produce graduates who will advance the profession of dental hygiene and improve dental health care through evidence-based research and scholarly activities. Finally, graduates are competent in self-assessment and scientific methodology in preparation for lifelong learning.

The Bachelor of Science degree in Dental Hygiene requires two academic years of pre-dental hygiene courses followed by two additional years of enrollment in the dental hygiene program.

**Admission**

Admission to the school is granted through the Office of Dental Admissions and Student Affairs that receives and processes all applications, evaluates credentials and mails letters of acceptance to applicants who qualify for

entrance. Because of the university's selective admissions policy and limited enrollment, only those applicants are accepted who present evidence of intellectual promise and strong personal qualifications, including good moral character and sound health. Prior to enrollment, accepted students must provide evidence of sound health and meet the school's health requirements. (Before registration, the Student Health Service form, signed by the applicant's attending physician, must be filed with the Student Health Center.) Admission to the university in all cases is determined by the Office of Dental Admissions and Student Affairs and appropriate selection committees.

Application forms may be obtained by mail, online or in person from the Office of Dental Admissions and Student Affairs. A nonrefundable \$25 fee must be sent with the completed dental hygiene application. An additional application fee must be submitted to the USC Undergraduate Admission Office.

Credentials for admission must include complete records of all previous college or university work. The student must request the registrar of each school attended to forward one official transcript of record directly to the Office of Dental Admissions and Student Affairs. These should include the program of studies in which the applicant is currently registered. The university does not initiate requests for these credentials.

Applications for the Bachelor of Science in Dental Hygiene should be filed well in advance of February 1 of the year in which the student wishes to be admitted. The program begins in the fall. Applicants for admission are requested to file their applications before they have completed one full year of college pre-dental work or pre-hygiene class.

Although students may transfer to USC at any time and begin prerequisite course work, the dental hygiene curriculum begins in the junior year. Admission to the university does not guarantee admission to the dental hygiene program.

Two applications are required, one for the USC Undergraduate Admission Office and one for the School of Dentistry. See the Undergraduate Education Admission section of this catalogue.

**Admission Requirements**

Between 30 and 40 students are admitted each year for the curriculum that leads to the Bachelor of Science in Dental Hygiene.

The Committee on Admissions examines credentials and bases its decision on the objective evaluation of these factors: pre-professional training, evidence of scholarship and personal evaluation of the student.

Minimum entrance requirements include: graduation from an accredited secondary school and completion of the following courses which may be transferred in from another college or university or taken at USC prior to bring admitted to the dental hygiene program.

*General Biology*

One semester with lab is required.

*Anatomy*

One semester with lab is required.

*General Chemistry with Lab*

One year is required.

**English Composition**

One year is required. Must include course work equivalent to WRIT 140 and one semester of any transferable English course.

**General Physiology Lab**

One semester is required.

**General Microbiology**

One semester is required.

**Nutrition**

One semester is required.

**Introduction to Sociology**

One semester is required.

**General Psychology**

One semester is required.

**Public Speaking**

One semester is required.

**General Education Requirements**

The university's general education program provides a coherent, integrated introduction to the breadth of knowledge you will need to consider yourself (and to be considered by other people) a generally well-educated person. This program requires six courses in different categories, plus writing and diversity requirements, which together comprise the USC Core. See pages 63 and 245 for more information.

All dental hygiene students have to follow the university's general education requirements.

There is no minimum number of transfer units you must complete before applying to admissions. No foreign course work will be accepted. Dental hygiene prerequisites and lower division general education categories must be completed or in progress by the time of application to the dental hygiene program. All prerequisite course work including required general education course work must be completed with a grade of "C" or better.

The following courses are not transferable: dental assisting, dental technology, secretarial science (typing, shorthand, etc.), or other technically or vocationally related courses.

All entrance requirements must be completed by June 15 preceding the September of admission, and complete final credentials must be on file in the Ostrow School of Dentistry of USC Office of Admission and Student Affairs by July 15 preceding enrollment. Notification of acceptance will be sent by the Office of Admission and Student Affairs after May 1.

**Orientation**

Students who have been accepted into the program and who have reserved their place in the class by paying the appropriate tuition deposit will be forwarded orientation materials by July 15.

Orientation is traditionally scheduled during the week before the first week of classes. The purpose of the program is to acquaint incoming students with the School of Dentistry, its policies, programs, faculty and facilities. Incoming students receive financial counseling and purchase their initial equipment issue as part of orientation activities.

**Graduation Requirements**

A student is eligible for the Bachelor of Science in Dental Hygiene after attaining the qualitative and quantitative level expected in the dental hygiene curriculum. This specifically includes: no marks of "F," "IN," "ICW," "IP," "MG" or "NCr"; no conditions existing at the termination of the final trimester that would result in academic probation, clinical probation or academic disqualification. In addition, each student must have demonstrated the characteristics expected of a health professional and have fulfilled the financial and other obligations required for graduation.

In addition to meeting the academic requirements indicated above, students must have a completed administrative clearance form on file in the Office of Academic Affairs before a degree can be conferred. This administrative clearance indicates that the student has met financial and other obligations to the university and to the student's patients.

**Curriculum**

Courses listed are required for completion of the degree. Course listings are current as of 2011-2012 and are subject to change without notice by action of the Ostrow School of Dentistry and the university.

**Bachelor of Science in Dental Hygiene Curriculum**

REQUIRED COURSES		UNITS
AMED 502	Emergency Medicine	2
AMED 524	Pain and Anxiety Control	2
ANAT 521	Head and Neck Anatomy	2
DBIO 310	Oral Biochemistry	2
DHIS 310	Basic Tissues and Histology and Embryology	2

DHYG 311ab	Fundamentals of Clinical Dental Hygiene Practice	3-3
DHYG 314L	Dental Morphology Laboratory	1
DHYG 316	Patient Education in Preventive Dental Care	1
DHYG 318	Dental Specialties	2
DHYG 320	Preventive Dental Therapy	2
DHYG 401	Introduction to Advanced Dental Hygiene	2
DHYG 410abc	Clinic: Dental Hygiene 2-7 each (3, 6, 6)	
DHYG 412	Preventive Dental Care Programs	1
DHYG 414ab	Advanced Dental Hygiene	2-2
DHYG 422	Essentials of Dental Hygiene Practice	1
DHYG 424ab	Research Methods	1-1
DHYG 516ab	Community Oral Health	2-2
DIAG 415	Radiographic Techniques	1
DIAG 521	Principles of Oral Radiology	2
DMAT 316L	Dental Materials and Clinical Procedures	2
DPHR 410	Principles of Pharmacology	2
GSPD 504	Dental Treatment of the Geriatric and Special Patient	2
HBHV 310	Interactional Skills in Dental Hygiene	1
MBIO 310	Principles of Microbiology and Immunology	2
OCCL 310	Fundamentals of Dental Morphology	1
OMOD 506	Infection Control	1
PEDO 310	Principles of Dentistry for Children	1
PERI 310ab	Introduction to Periodontal Diseases	1-1
PERI 415	Basic Periodontal Therapy	1
PERI 504	Advanced Periodontics	1
PTHL 312abc	Medicine and Pathology	1-3-2

**Minor in Craniofacial and Dental Technology**

The Ostrow School of Dentistry, the Viterbi School of Engineering Department of Biomedical Engineering and the Dornsife College of Letters, Arts and Sciences Department of Biological Sciences jointly offer the minor in craniofacial and dental technology. This minor is designed to prepare engineering, pre-dental, pre-medical and biological sciences undergraduates to enter the dental biotechnology industry as well as to introduce them to recent innovations in craniofacial sciences and therapeutics.

The course work introduces students to concepts in craniofacial histology and embryology, head-and-neck anatomy, genetics, biochemistry and biotechnology as well as applications to dental diagnostics, imaging and dental therapies (dental implants, restorative dentistry, craniofacial genetics).

This minor requires a minimum of 18 units unique to the minor and a varying number of total units beyond major requirements, depending upon the student's major program of study and the elective(s) chosen by the student. Students may be required to complete a minimum of 38 units for the minor including prerequisites or as much as 50 units, depending on whether their major includes any of the minor requirements or their prerequisites.

Please see a biomedical engineering, biological sciences or Ostrow School of Dentistry advisor for specific program requirements.

CORE REQUIRED COURSES, UPPER DIVISION		UNITS
DENT 412	Fundamentals of Craniofacial and Dental Technology	3
DHIS 310	Basic Human and Oral Histology and Embryology	4
BISC 325*	Genetics	4
BME 410*	Introduction to Biomaterials and Tissue Engineering	3
Total core units:		14
ELECTIVES		UNITS
Enroll in at least two courses from the following (not part of your major) to complete at least 16 units outside your home department:		
BISC 330L*	Biochemistry	4
BISC 403*	Advanced Molecular Biology	4
BISC 406L*	Biotechnology	4
BISC 410*	Applications of Molecular Biology to Medicine	4
BISC 435*	Advanced Biochemistry	4
BME 404*	Biomechanics	3
BME 416	Development and Regulation of Medical Products	3
BME 451*	Fundamentals of Biomedical Microdevices	3
DENT 221	Introduction to Dentistry	1
ENGR 305	Engineering Biology Matters	3

HP 340L	Health Behavior Statistical Methods	4
HP 350L	Health Behavior Research Methods	4
MASC 310	Materials Behavior and Processing	3
Total elective units:		6-8

\* Prerequisite required

### Progressive Degree Program in Public Health

The public health program admits a limited number of USC undergraduate students to pursue the M.P.H. degree while completing a bachelor's degree. Applicants to the program must have completed 64 units of course work and must submit their applications prior to completion of 96 units of course work. Applicants do not have to submit GRE scores, but are expected to have a minimum GPA of 3.5 at the time of application. The application for admission to a progressive degree program must be accompanied by an approved course plan proposal and letters of recommendation from two USC faculty members. The requirements for both the bachelor's degree and the M.P.H. degrees must be satisfied. For further details on progressive degree programs, see page 86.

## Professional Degrees

### Doctor of Dental Surgery

The Doctor of Dental Surgery (D.D.S.) program covers 11 consecutive 14-week trimesters. The course of study maximizes the interrelationship of all basic sciences and clinical detail sciences required by the Commission on Dental Accreditation of the American Dental Association.

USC's reputation for excellent preparation of its graduates for private practice has been enhanced by curriculum changes that permit students to begin clinical experience in their first year. At the same time, opportunity and encouragement are given to those who might elect to pursue careers in teaching and research.

#### Admission

The Ostrow School of Dentistry admits 144 students each year for the curriculum leading to the Doctor of Dental Surgery. Admission to the school is granted through the Office of Admission and Student Affairs which receives and processes all applications, evaluates credentials and notifies applicants who qualify for entrance by forwarding letters of acceptance. Students are selected by the Admissions Committee, which bases its decision on consideration of an applicant's personal qualities, aptitude and superior scholarship necessary for the successful study and practice of dentistry. Candidates who have received or will receive a baccalaureate or higher degree will be considered more favorably than applicants who have fulfilled only minimum requirements. As a

precondition of enrollment, accepted students must provide evidence of sound health and meet the school's health requirements.

Admission information may be obtained by mail, online or in person. Address inquiries to: Ostrow School of Dentistry of USC, Office of Admission and Student Affairs, 925 W. 34th Street, Room 201, Los Angeles, CA 90089-0641, (213) 740-2841, email: [uscscdadm@usc.edu](mailto:uscscdadm@usc.edu) or access the school's Website at [dentistry.usc.edu](http://dentistry.usc.edu).

### Admission Requirements

Minimum entrance requirements include: (1) graduation from an accredited secondary school, with credit for at least 12 academic units, including three in English, three in one laboratory science course, two in one foreign language and two in college preparatory mathematics; (2) a minimum of 60 semester units, or the equivalent completed or in progress, at the time of application, in an accredited college or university in the United States or Canada. A baccalaureate or higher degree is preferred. No more than 60 semester hours earned at a community college will be accepted and preference is given to candidates who complete the science prerequisites at a four year institution; (3) required courses, semester hours with laboratory required: 8 units each – one year's completed course – of general biology (zoology), inorganic chemistry, organic chemistry, physics; other courses: English composition (8 units or one year), philosophy, history or fine arts (8 units or one year). All prerequisite course work must be completed with a grade of "C" or better; (4) it is strongly suggested that students take additional upper division courses. Biochemistry, human or comparative anatomy, embryology, histology, genetics, physiology, psychology, sociology and economics are examples of recommended courses; (5) all students who apply for admission to the School of Dentistry are required to take the Dental Admission Test (DAT), given under the auspices of the Council on Dental Education of the American Dental Association. The Dental Admission Test must be taken no later than February 1 of the year for which formal application is made.

To expedite the admissions process, it is recommended that the DAT be taken during a testing period before filing formal application through the Associated American Dental Schools Application Service (AADSAS). Test scores more than two years old will not be accepted. Applicants should check with the Dental Admissions Office. Full information about the test is sent to all applicants upon request, or can be obtained from the Division of Educational Measurements, Council on Dental Education, American Dental Association, 211 East Chicago Avenue, Chicago, IL 60611. No action can be taken on the application until DAT scores have been received.

(6) An interview at the School of Dentistry may be required of all applicants who appear qualified for consideration as determined by the Office of Admission and Student Affairs, although this interview may be waived for exceptionally qualified candidates as determined by the Dental Admissions Committee; a manual dexterity test may be required as part of an interview process; (7) complete transcripts of undergraduate and graduate

work, including degree notations, must be on file in the Office of Admission and Student Affairs by July 15 prior to enrolling; (8) residency requirements: as a private institution, USC seeks a culturally and geographically diverse population. Therefore, out-of-state applicants are evaluated and selected based on the same criteria as California residents.

No applicant will be denied admission on the basis of race, religion, creed or disability. All admitted students must provide evidence that functional health is sufficient to meet professional demands, both in the student role and as an entry-level practitioner.

### Application Procedure

(1) An application form should be obtained from the Associated American Dental Schools Application Service (AADSAS) by writing: AADSAS, 1625 Massachusetts Avenue, N.W., Suite 600, Washington, D.C. 20036-2212 or access the online version at [www.adea.org](http://www.adea.org) or email: [csraadsas@adea.org](mailto:csraadsas@adea.org). (2) The AADSAS application form should be filled out and returned to AADSAS. USC requires that the application be received by AADSAS no later than February 1 of the year in which enrollment is anticipated. Early application and file completion is recommended for applicants desiring an off-site interview. Do not send the application form to USC directly. (3) Applicants are required to pay a nonrefundable \$85 processing fee, which should be forwarded directly to admissions (international students requiring a student visa must submit a \$145 processing fee). (4) Notification from the Office of Admissions and Student Affairs will be sent, indicating that the application has been received from AADSAS. (5) Candidates who are being seriously considered for acceptance will be sent an invitation for an interview and will be required to submit additional information. No interview can be granted unless the file is complete, including DAT scores. The interview may be waived for exceptional candidates as determined by the admissions committee. (6) Notification of acceptance will be sent by the Office of Admissions and Student Affairs sometime after December 1. (7) A non-refundable commitment fee of \$1,500 is required from students by the deadline indicated in their acceptance letter to hold a place in the entering class. A second commitment fee of \$1,500 is required by May 1. Applicants accepted after May 15 are required to pay a flat fee of \$3,000 within 15 days from the date of their acceptance letter to hold a place in the entering class; applicants accepted after July 1 are required to pay a \$3,000 commitment fee within two days. These non-refundable fees will be applied toward tuition upon enrollment.

(8) Preregistration for the first year dental class is held before orientation. (9) All entering students are required to prepay \$3,000 toward the initial tuition by July 1. (10) As a precondition of enrollment, accepted students must provide evidence of sound health and meet the school's health requirements.

### Orientation

Students who have been accepted into the predoctoral dental program and who have reserved their place in the class will receive information on orientation during the first two weeks in July.

Orientation takes place prior to the first week of classes. The purpose of the orientation program is to acquaint incoming students with the school, its policies, programs, faculty and facilities. Incoming students receive financial counseling and receive their initial equipment issue during this orientation period.

### Graduation Requirements

A student is eligible for the Doctor of Dental Surgery after successfully attaining the qualitative and quantitative level expected in the doctoral curriculum, specifically: has met the 2.0 GPA requirement for graduation; has no conditions existing at the termination of the final academic time unit that would qualify him or her for academic probation, clinical probation or academic disqualification; has no marks of "F," "IN," "MG" or "NCr"; has demonstrated the personal characteristics expected of a professional; has fulfilled his or her financial obligations as well as all other obligations and requirements for graduation.

In addition to meeting the academic requirements indicated above, students must have a completed administrative clearance form on file in the Office of Academic Affairs before a degree can be conferred. This administrative clearance indicates that the student has met financial and other obligations to the university and to the student's patients.

### Curriculum

The curriculum leading to the Doctor of Dental Surgery degree undergoes constant change to meet the challenges of modern dental practice. Course listings are current as of 2011-2012 and are subject to change without notice by action of the Ostrow School of Dentistry and the university.

### Doctor of Dental Surgery

#### Curriculum – Traditional Program

REQUIRED COURSES		UNITS
AMED 502	Emergency Medicine	2
AMED 523	Pharmacosedation II	1
AMED 524	Pain and Anxiety Control	2
ANAT 521	Head and Neck Anatomy	2



ANAT 522	Systemic Human Anatomy	3	INTR 503	Preclinical Diagnosis and Treatment Planning	2	PERI 561abcd	Clinic: Periodontal Therapy I	0-0-0-1
ANAT 523	Head and Neck Dissection	1	INTR 524abcdef	Clinical Practice	0-0-0-0-3	PERI 562ab	Clinic: Periodontal Therapy II	0-2
CMDT 501	Introduction to Community Dentistry Programs	1	INTR 550ab	Introduction to Clinical Dentistry	0-1	PTHL 501	Oral Pathology	4
CMDT 502ab	Contemporary Dental Practice	2-2	INTR 551abcde	Clinical Diagnosis and Treatment Planning	0-0-0-0-1	PTHL 504ab	Seminar: Oral Pathology	0-0
CMDT 507abc	Ethical Issues in the Practice of Dentistry	0-0-1	INTR 553abcdef	Clinic: Diagnosis and Treatment Planning	0-0-0-0-2	REST 501	Preclinical Operative and Fixed Prosthodontics (Conjoint)	2
CMDT 601	Mobile Clinic	1	INTX 501abcdefh	Integrated Basic and Applied Science I	1-1-2-2-2-1	REST 503ab	Clinical Restorative Dentistry	1-1
DBIO 501	Biochemistry and Molecular Biology	2	INTX 502abcdef	Integrated Basic and Applied Science II	1-1-2-3-1-2	REST 504	Diagnosis and Treatment Planning	1
DIAG 521	Principles of Oral Radiology	2	MBIO 501	Immunology	2	REST 521	Preclinical Operative/ Fixed Prosthodontics Laboratory	3
DIAG 522	Radiographic Techniques	1	OCCL 502	Occlusion	1	REST 522	Aesthetics in Dentistry	1
DMAT 505	Dental Materials Update	1	OCCL 521ab	Dental Morphology and Function	3-2	RPRO 502	Removable Complete Prosthodontics	1
DMAT 521ab	Dental Materials	2-2	OCCL 522	Occlusion Laboratory	1	RPRO 503ab	Preclinical Removable Prosthodontics and Implants	2-1
DPHR 501	Pharmacology	3	OMOD 501	Emergency Dental Treatment	1	RPRO 510	Implant Dentistry	1
ENDO 501	Clinical Endodontics	1	OMOD 502	Chronic Orofacial Pain	2	RPRO 513	Removable Partial Prosthodontics	1
ENDO 502	Advanced Endodontics	1	OMOD 506	Infection Control	1	RPRO 523ab	Preclinical Removable Prosthodontics and Implants	1-1
ENDO 521	Preclinical Endodontics	3	OMOD 551abcd	Clinic: Physical Evaluation	0-0-0-1	RPRO 550	Removable Complete Prosthodontics	1
ENDO 562abcd	Clinic: Concentrated Early Endodontics	0-0-0-1	OMOD 562abcd	Clinic: Hospital Dentistry	0-0-0-1	RPRO 561abcd	Clinic I	1
ENDO 563ab	Clinic: Endodontic Therapy	0-2	OMOD 563abcdef	Clinic: Emergency Dental Treatment	0-0-0-0-1	RPRO 562ab	Clinic: Removable Complete Prosthodontics I	0-0-0-2
FPRO 521	Preclinical Fixed Prosthodontics I	3	OPER 521ab	Preclinical Operative Dentistry I	1-3	RPRO 571abcdef	Clinic: Removable Partial Prosthodontics	0-0-0-0-2
FPRO 522	Preclinical Fixed Prosthodontics II	3	OPER 522	Preclinical Operative Dentistry II	3	SURG 501	Oral Surgery	2
FPRO 561abcd	Clinic: Fixed Prosthodontics I	0-0-0-3	OPER 562ab	Clinic: Operative Dentistry II	0-6	SURG 562abc	Clinic: Oral Surgery I	0-0-1
FPRO 562ab	Clinic: Fixed Prosthodontics II	0-3	ORTH 501ab	Seminar: Orthodontics	0-1	SURG 563abc	Clinic: Oral Surgery II	0-0-1
GSPD 504	Dental Treatment of the Geriatric and Special Patient	2	ORTH 521	Preclinical Orthodontics	2	SURG 564abcd	Clinic: Hospital Oral Surgery	0-0-0-1
GSPD 562abc	Clinic: Geriatric Dentistry	0-0-1	ORTH 561abcdef	Clinic: Orthodontic Therapy	0-0-0-0-2			
GSPD 563abc	Clinic: Special Patient Care	0-0-1	PEDO 501	Clinical Pediatric Dentistry	1			
HBHV 501	Behavioral Skills in Dentistry	1	PEDO 521	Preclinical Pediatric Dentistry	2			
HBHV 502	Interactional Skills	1	PEDO 551abc	Clinic: Dentistry for Children I	0-0-2			
HBHV 504	Patient Education and Management	1	PEDO 561abc	Clinic: Dentistry for Children II	0-0-1			
HBHV 550	Communications in Clinical Dentistry	1	PERI 502	Periodontal Diseases and Elements of Therapeutic Judgment	2			
HBHV 561abcde	Clinic: Behavioral Dentistry	0-0-0-0-1	PERI 504	Advanced Periodontics	1			
INDD 501	Applied Growth and Development	1	PERI 505ab	Advanced Periodontal Surgery	2			
INTB 504	Human Craniofacial Development and Genetics	3	PERI 521	Clinic: Introductory Periodontal Therapy	1-1			
INTB 521	Basic and Medical Microbiology	2	PERI 550ab					
INTP 503ab	Evaluation of Scientific Information in Clinical Practice	0-1						

Five units of selective courses are required in addition to the above.

#### Advanced Placement Doctoral Dental Degree

The Advanced Placement D.D.S. program allows the outstanding student who has completed a Bachelor of Science in Dental Hygiene to waive several courses in order to complete the doctoral dental degree in 151 units rather than the 185 units for the regular program.

### Admission Requirements

In addition to the entrance requirements to the Ostrow School of Dentistry, the following additional requirements must be met: (1) bachelor's degree from the USC dental hygiene program completed within five years of the projected date of entry into the doctoral dental program; (2) a minimum grade point average of 3.0 (A = 4.0) in the dental hygiene program and a minimum "C" grade in each of the courses waived; (3) two letters of recommendation from faculty in the dental hygiene program.

### Degree Requirements

The student in the Advanced Placement D.D.S. program must complete all the D.D.S. required courses except for the following: DPBL 501ab, DPBL 502ab, DPBL 503ab and DPBL 504ab.

### Six-Year Program

The School of Dentistry offers a six-year pre-dental/dental program.

The main purposes of the Accelerated Dental Acceptance Program Track (ADAPT) are (1) to continue to attract high quality applicants to the Ostrow School of Dentistry of USC, (2) to encourage students interested in dentistry to take their pre-dental education at USC, and (3) to offer an opportunity for quality students to complete their education at an outstanding private university. Only students who are completing their senior year in high school are eligible to apply.

### Application Procedures

(1) Complete and submit the USC undergraduate admissions application by the priority deadline of December 15. (2) Complete and submit the ADAPT application and essay to the Ostrow School of Dentistry of USC by February 1. (3) In addition, forward the following items directly to the School of Dentistry: (a) \$85 application fee, (b) 2" x 2" passport-style photograph, (c) two letters of recommendation from high school science teachers, (d) copies of SAT scores and high school transcripts, and copy of acceptance letter from USC.

For additional information and an application, contact: Ostrow School of Dentistry of USC, Office of Admission and Student Affairs, 925 W. 34th Street, Room 201, Los Angeles, CA 90089-0641, (213) 740-2841, email: [uscadadm@usc.edu](mailto:uscadadm@usc.edu) or access the school's Website at [dentistry.usc.edu](http://dentistry.usc.edu).

### D.D.S./M.B.A.

In response to changes in dental care delivery systems and to the increasing complexity of dental care financing, the Ostrow School of Dentistry offers an innovative program for individuals desiring knowledge in both dental science and business administration.

The D.D.S./M.B.A. dual degree program is a five-year program offered cooperatively by the Ostrow School of Dentistry and the Marshall School of Business. Students must complete all requirements established by both schools for their respective degrees.

The program involves completion of the first year in the Ostrow School of Dentistry, the second in the Marshall School of Business, and then completion of the balance of the slightly modified dentistry program. A total of 48 units must be completed in the Marshall School of Business.

*First Year:* required dentistry courses

*Second Year:* required M.B.A. courses and graduate business electives

*Third to Fifth Year:* Completion of the remainder of required dentistry courses and graduate business elective courses sufficient to bring the total units completed in the Marshall School to at least 48. Dual degree students may not count courses taken outside the Marshall School of Business toward the 48 units. The dentistry requirement of four units of selective courses will be met by Marshall School courses.

The program may be completed in five calendar years.

### Admission Requirements

Students who have successfully completed one year in the School of Dentistry will be considered for admission to the Marshall School of Business. All requirements for admission to the regular M.B.A. program (grade point average, GMAT score, etc.) must be fulfilled by the dental student for admission to the Marshall School of Business.

The D.D.S. and the M.B.A. degrees are awarded simultaneously upon completion of their requirements by the Ostrow School of Dentistry and the Marshall School of Business.

### D.D.S./M.S. in Gerontology

The D.D.S./M.S. dual degree program extends over five years and is offered cooperatively by the Ostrow School of Dentistry and the Davis School of Gerontology. The program addresses the challenges facing oral health care providers as the number of older persons needing dental care increases. With the evolution of care toward patients who live longer lives, graduating dentists will be better prepared to provide service to the aging population in community settings and health care facilities.

The student spends the first year taking required D.D.S. courses in the Dental School. Gerontology course work will be introduced in the second year and continue through the fifth year.

### Gerontology Requirements

The Master of Science in Gerontology requires 38 units of course and fieldwork which includes the core content of the M.S. in Gerontology program.

REQUIRED COURSES	UNITS
GERO 475	Ethical Issues in Geriatric Health Care 4
GERO 508	The Mind and Body Connection through the Lifespan 4
GERO 520	Life Span Developmental Psychology 4
GERO 530	Life Span Developmental Sociology 4
GERO 540	Social Policy and Aging 4
GERO 555	Integrating Gerontology: A Multidisciplinary Approach 4
GERO 591	Field Practicum 6
GERO 593	Research Methods 4

ELECTIVE COURSES	UNITS
Four units to be selected from the following list in consultation with the advisor:	
GERO 522	Counseling Older Adults and Their Families 4
GERO 550	Administration and System Management in Programs for Older Adults 4
GERO 554	Evaluation: Incorporating Evidence-Based Practices 4

### Dentistry Requirements

The D.D.S. requires 185 units of credit. The Ostrow School of Dentistry will waive CMDT 501, CMDT 507abc, GSPD 562abc, HBHV 501, HBHV 504, INTF 503ab and electives totaling 10 units from the required curriculum. In its place, students are required to take INTF 651 Experience in Dental Teaching (4), INTF 502ab Human Relations in Dental Practice (2-2), GSPD 610 Clinical Gerontology (1), GSPD 612 Special Patient Care Clinic (1).

### Program Adaptation

The Davis School of Gerontology will waive 14 units of credit: GERO 510 Physiology of Development and Aging (4); GERO 589 Case Studies in Leadership and Change Management (4); GERO 591 Field Practicum (2) and GERO electives (4). These requirements will be replaced by INTF 651 (4), INTF 502ab (2-2), GSPD 610 (1), GSPD 612 (1) and INTX 502e (1).

**Admission Requirements**

In addition to the entrance requirements to the Ostrow School of Dentistry (listed on page 521), the following additional requirements must be met:

- (1) Applicants must meet the admission requirements of both the Graduate School and the Dental School.
- (2) Applicants must hold a bachelor's degree in any academic field.

(3) Applicants must have a 3.0 cumulative GPA in the last two years of undergraduate school and be competitive with the incoming class.

(4) Performance on the Graduate Record Exam to the satisfaction of the School of Gerontology and competitive with the incoming class.

(5) Evidence of leadership and motivation.

(6) Completion of the M.S. in Gerontology application including a written statement regarding commitment to the field of geriatric dentistry, letters of reference, etc.

## Doctor of Dental Surgery – Problem Based Learning Program

The Problem Based Learning Program has been designed to address the recommendations developed by the National Academy of Sciences Institute of Medicine in their report, "Dental Education at the Crossroads – Challenges and Change." This program will present the identical set of curricular learning outcomes that were approved by the American Dental Association Council on Dental Accreditation. The Dental Problem Based Learning Program represents an alternative approach to the Ostrow School of Dentistry curriculum rather than a new curriculum.

The objective of the Problem Based Learning Program is to educate a student who will be committed to lifelong, self-motivated learning, skilled in the techniques of problem solving in a clinical setting, well-prepared to deal with the future advances in dental therapy and dental care delivery, able to deal with the medical presentations of dental patients, effective in group learning/accomplishment environments and highly skilled in the delivery of dental health care of outstanding quality.

**Admission Requirements**

Minimum admission requirements are identical to those for the Doctor of Dental Surgery; refer to the Admission Requirements section under the Doctor of Dental Surgery.

**Curriculum**

The problem based learning curriculum achieves the identical set of curricular learning outcomes found in the Ostrow School of Dentistry curriculum. However, the methodology and course structure differ. For instance, greater emphasis is placed on clinical observation and the small group learning experience.

Periodic individual meetings held each trimester by PBL faculty members help to communicate each student's progress. Peer feedback may also play an integral role in the PBL curriculum.

**Graduation Requirements**

Graduation requirements are identical to those for the Doctor of Dental Surgery; refer to the Graduation Requirements section under the Doctor of Dental Surgery traditional program.

**Problem Based Learning Curriculum**

REQUIRED COURSES		UNITS
DPBL 501abc	Dental Problem Based Learning – Human Structure I	3-3-3
DPBL 502abc	Dental Problem Based Learning – Human Function I	8-8-8
DPBL 503abc	Dental Problem Based Learning – Human Behavior I	2-2-2
DPBL 504abc	Dental Problem Based Learning – Human Clinical Dentistry I	4-4-4
DPBL 511abc	Dental Problem Based Learning – Human Structure II	2-2-2
DPBL 512abc	Dental Problem Based Learning – Human Function II	5-5-5
DPBL 513abc	Dental Problem Based Learning – Human Behavior II	3-3-2

DPBL 514abc	Dental Problem Based Learning – Human Clinical Dentistry II	7-7-8
DPBL 521abc	Dental Problem Based Learning – Human Structure III	1-1-1
DPBL 522abc	Dental Problem Based Learning – Human Function III	1-1-1
DPBL 523abc	Dental Problem Based Learning – Human Behavior III	1-1-1
DPBL 524abc	Dental Problem Based Learning – Human Clinical Dentistry III	14-14-14
DPBL 531ab	Dental Problem Based Learning – Human Structure IV	1-1
DPBL 532ab	Dental Problem Based Learning – Human Function IV	1-1
DPBL 533ab	Dental Problem Based Learning – Human Behavior IV	1-1
DPBL 534ab	Dental Problem Based Learning – Human Clinical Dentistry IV	13-13

## Advanced Standing Program for International Dentists

This program is designed to teach qualified dentists from other countries the knowledge and skills available in the United States. Time necessary to complete the program depends upon the doctor's ability; a minimum of two years is usually required. About eight months will be devoted to fundamental, technical and academic procedures. The remaining time is devoted to clinical training as necessary to achieve graduation qualifications. Graduation from the Advanced Standing Program for International Dentists leads to a D.D.S. degree but does not give automatic licensure to practice dentistry. However, graduates are eligible to take the State Board Dental Examinations in most of the United States. (A few states still require U.S. citizenship.)

Additional information may be requested from the Ostrow School of Dentistry of USC, Office of Admissions and Student Affairs, 925 W. 34th Street, Room 201, Los Angeles, CA 90089-0641, (213) 740-2841, email: [uscscdadm@usc.edu](mailto:uscscdadm@usc.edu) or access the school's Website at [dentistry.usc.edu](http://dentistry.usc.edu).

### Admission

Prospective students must apply to the Advanced Standing Program for International Dentists. Selected applicants will be tested in October and accepted based on the following requirements: (1) completion of the formal application (before September 15 for admission to the program in April). A \$145 processing fee must accompany the application. (2) Successful completion of the National Boards Part I examination of the American Dental Association (ADA). A score of 75 percent must be attained in each category. Higher scores are advantageous in evaluation of the candidate's academic level. (3) Proficiency in English is an important key to success in the program. To demonstrate competence in English, applicants must score 250 (computer-based), 600 (paper-based) or 100 (Internet-based) on the Test of English as a Foreign Language (TOEFL). Information on the TOEFL can be obtained from the Educational Testing Service at [www.ets.org](http://www.ets.org). (4) A small group problem-based interview evaluation session with members of the School of Dentistry. (5) Two letters of recommendation from dental school faculty. (6) A brief but accurate account of clinical experience. (7) Personal statement. (8) Documentary proof of license to practice from a Ministry of Health or proper governing body. (9) Satisfactory completion of and competence in the following academic and artistic entrance examinations to be given to invited applicants in October: (a) fixed prosthodontics (practical); (b) operative dentistry (practical). In addition, a separate written

examination may be administered. (10) Complete official documents (transcripts) of all college and university course work, including dental education in the original language accompanied by certified English translation when necessary. (11) Certification of dental degree. Candidates chosen will be those who demonstrate the best qualifications in all academic and practical skills. (12) As a pre-condition of enrollment, accepted students must provide evidence of sound health and meet the school's health requirements.

### Student Visas

The I-20 Student Visa is issued to the applicant only after complete admission and acceptance has been granted. Before the papers can be processed, the applicant must present a copy of the I-94 form (white sheet in the passport) and a notarized statement of financial support for tuition and expenses for one year (\$120,000) to the Advanced Standing Program for International Dentists. These materials must be submitted at the time of application. The International Admission Office will issue the I-20 visa upon receipt and approval of these documents.

### Financial Assistance

The United States government requires all international applicants to provide proof of ability to pay tuition and living expenses before a formal letter of admission or the forms needed to obtain a visa will be issued.

International students are not eligible to participate in U.S. federal financial aid programs. Please contact the Ostrow School of Dentistry of USC Office of Financial Aid to discuss other financing options at (213) 740-2841 or [uscscdfa@usc.edu](mailto:uscscdfa@usc.edu).

### Curriculum

Each candidate for the D.D.S. degree should complete the course of instruction in two years, however, some individuals may need more time. The first four to eight months will be spent in preclinical exercises to acquaint the student with the fundamental technical procedures used at USC. The balance will be used for clinical procedures related to diagnosis and treatment of patients.

### Grade Point Average Standards

Since this is a short program and highly concentrated, a GPA of 2.0 (A = 4.0) must be maintained each trimester. Therefore, each applicant will be provisionally accepted. If a doctor is unable to maintain an average GPA of 2.0, he or she will be asked to resign.

Periodic meetings each trimester by the entire Advanced Standing for International Dentists faculty to evaluate each student's progress are used to help counsel the students more effectively in their course work. From these meetings, recommendations are made regarding advancement, special programs and disqualification.

### Graduation Requirements

In order to receive the Doctor of Dental Surgery (D.D.S.) degree, students in the Advanced Standing Program for International Dentists must: (1) successfully complete all the required courses and clinical patient care assigned in trimesters VI, VII, VIII, IX, X and XI of the Problem Based Learning D.D.S. curriculum; (2) pass Part I and Part II of the National Dental Board Examinations; and (3) achieve all of the competencies defined for the D.D.S. curriculum and complete all required clinical performance evaluations. All assessments of progress to degree completion will be equivalent for all students seeking the D.D.S. degree.

In addition to meeting the academic requirements indicated above, students must have a completed administrative clearance form on file in the Office of Academic Affairs before a degree can be conferred. This administrative clearance indicates that the student has met financial and other obligations to the university and to the student's patients.

### Advanced Standing Program for International Dentists Curriculum

REQUIRED COURSES		UNITS
DPBL 511c	Dental Problem Based Learning – Human Structure II	2
DPBL 512c	Dental Problem Based Learning – Human Function II	5
DPBL 513c	Dental Problem Based Learning – Human Behavior II	2
DPBL 514c	Dental Problem Based Learning – Human Clinical Dentistry II	8
DPBL 521abc	Dental Problem Based Learning – Human Structure III	1-1-1
DPBL 522abc	Dental Problem Based Learning – Human Function III	1-1-1
DPBL 523abc	Dental Problem Based Learning – Human Behavior III	1-1-1

DPBL 524abc	Dental Problem Based Learning – Human Clinical Dentistry III	14-14-14	DPBL 533ab	Dental Problem Based Learning – Human Behavior IV	1-1
DPBL 531ab	Dental Problem Based Learning – Human Structure IV	1-1	DPBL 534ab	Dental Problem Based Learning – Human Clinical Dentistry IV	13-13
DPBL 532ab	Dental Problem Based Learning – Human Function IV	1-1			100

## Advanced Programs in Dental Education

The Ostrow School of Dentistry offers advanced dental education programs in general dentistry, endodontics, general practice residency, orofacial pain and oral medicine, oral and maxillofacial surgery, pediatric dentistry, periodontology and prosthodontics, all leading to a certificate in a clinical specialty. The Ostrow School of Dentistry in conjunction with the Graduate School also offers a combined program in orthodontics and craniofacial biology, in pediatric dentistry and craniofacial biology and periodontics and craniofacial biology leading to a Master of Science degree and a certificate. In conjunction with the Keck School of Medicine, the Ostrow School of Dentistry offers a combined program leading to an M.D. degree and a certificate in oral and maxillofacial surgery. In addition to clinical seminars and clinical experience, students take basic science courses with advanced students from other departments.

The certificate curriculum consists of a core of basic science subjects plus clinical seminars and clinical experience. Elective subjects may also be selected by the student with the approval of the program director.

The estimated lengths of programs are as follows:

Endodontics, 24 months  
 General Dentistry, 12 months  
 General Practice Residency, 12 months  
 Oral and Maxillofacial Surgery, 48 months  
 Oral and Maxillofacial Surgery/M.D., 72 months  
 Orofacial Pain and Oral Medicine, 24 months  
 Orthodontics, 36 months  
 Pediatric Dentistry, 24 or 36 months  
 Periodontology, 36 months  
 Prosthodontics, 36 months

All programs will begin on July 1.

### Admission Requirements

Applicants must hold the Doctor of Dental Surgery or Doctor of Medical Dentistry degree and must present the appropriate degrees, approved transcripts and affidavits as prescribed by the Office of Dental Admissions and Student Affairs.

### Admission Procedures

Prospective students should apply through the Postdoctoral Application Support Service (PASS) at [www.adea.org/pass](http://www.adea.org/pass). Prospective students to the integrated M.D. degree/oral and maxillofacial surgery certificate program should apply through the American Medical College Application Service (AMCAS). For selection and admission to the periodontics/CBY, orthodontics/CBY, and pediatrics/CBY dentistry programs, applicants are required to take the Aptitude Section of the Graduate Record Examinations; a score of 1000 or above is desired for pediatric dentistry. For selection and admission for orthodontics and periodontics/CBY, a combined score (verbal and quantitative) of 1100 or better is required. The last acceptable test is in September of the year preceding desired admission. For further information regarding the GRE, applicants may contact a university in their area or write to: USC Testing Bureau, University Park, Los Angeles, CA 90089-0052, or visit the GRE Website at [www.gre.org](http://www.gre.org).

The following material is also required to complete the application: (1) a PASS application and a \$85 processing fee (graduates of foreign dental schools or students requiring a visa must submit a \$145 processing fee). Applications and information for the PASS application are available at PASS, Suite 600, 1625 Massachusetts Avenue N.W., Washington, D.C. 20036-2212, or online at [www.adea.org/pass](http://www.adea.org/pass); (2) applicants for General Dentistry, General Practice Residency, Orthodontic, Pediatric Dentistry and Oral Surgery programs must submit applicant

agreement forms to the Postdoctoral Dental Matching Program. Information and forms can be obtained online at [www.natmatch.com/dentres](http://www.natmatch.com/dentres); (3) a 2" x 2" passport style photograph of the applicant; (4) one official copy of the applicant's dental school transcript with degree notation. Foreign transcripts and degree notations must be submitted with a certified English translation; (5) three letters of recommendation: (a) one from the program director or chairman of the specific graduate department applied to, or someone who is currently a pedodontist, orthodontist, etc.; (b) one from a full-time faculty member in the basic sciences; (c) a general character reference from applicant's superior in service, or an individual by whom he or she was employed; (6) board scores Part I and Part II for all programs; MCATs are required for the Integrated M.D. degree/oral maxillofacial surgery certificate program. GRE scores are required for Orthodontics, Periodontics/CBY and Pediatric/CBY programs. International students are required to take GREs for the two-year certificate program. These requirements may be waived at the discretion of the program director; (7) a biographical statement; (8) applicants may be asked to be available for an interview. If one is necessary, applicants will be contacted by the director of the individual advanced program; (9) applicants will be required to pay a non-refundable \$1,500 tuition deposit upon notification of acceptance. (10) As a precondition to enrollment, accepted students must provide evidence of sound health and meet the school's health requirements.

### Timetable for Applications

Applications for admission to advanced programs must be received as follows:

Endodontics, Sept. 1  
 Periodontology, Sept. 1  
 Oral and Maxillofacial Surgery, Oct. 1  
 Orofacial Pain and Oral Medicine, Oct. 1

Orthodontics, Oct. 1  
 General Dentistry, Oct. 15  
 General Practice Residency, Oct. 15  
 Pediatric Dentistry, Nov. 1  
 Prosthodontics, Nov. 1

Completed applications and related information are reviewed first by the faculty of the department of interest. In selecting applicants for admission the faculty considers academic records and personal qualifications. Final approval for admission rests with the advanced education coordinating committee. Responsibility for advising the student after admission rests with the department chair.

## Advanced Endodontics

The advanced endodontics certificate program is a 24-month course of study. This program provides students with the background information and clinical experience necessary for a specialist in the practice of endodontics, and also offers activities in research and teacher-training for students interested in academic endodontics.

Students are prepared for certification examination by the American Board of Endodontists.

Emphasis is placed on the interaction of this specialty with other specialties and with general dentistry.

The program in endodontics is accredited by the Commission on Dental Accreditation, a specialized accrediting body recognized by the Council on Postsecondary Accreditation and the United States Department of Education.

### Orientation

A departmental orientation session is usually held the first week of classes, beginning in late June. Incoming students are acquainted with the Ostrow School of Dentistry, its policies, procedures, faculty and facilities.

### Student Issue – Advanced Programs

Dental units in the school's clinics are equipped with Midwest Company type tubing and couplers for low and high speed air hand pieces. Advanced students must provide their own adapters to fit the school's couplers unless the students' present hand pieces are

already so modified. The Dental Bookstore will assist in such conversions, if necessary. The bookstore has some low speed air hand pieces available for purchase.

Students accepted into an advanced program should consult their program directors about needed equipment.

### Advanced Endodontics Curriculum

REQUIRED COURSES		UNITS
ADNT 701	Research Methodologies in Dentistry	2
ADNT 702	Physical Diagnosis	2
ADNT 704ab	Oral Biology	1-13 each
ADNT 710	Internship: Dental Education	1-5
AMED 750abc	Physical Evaluation and Anesthesia	2-2-1
ANAT 701	Advanced Head and Neck Anatomy	1
DHIS 701	Advanced Oral Histology	2
DMAT 701	Advanced Biomaterials	2
DPHR 701	Advanced Pharmacology	1
ENDO 521	Preclinical Endodontics	3
ENDO 701abcd	Seminar: Biological Basis of Endodontic Therapy	1-1-1-1

ENDO 702	Seminar: Advanced Clinical Endodontics	2
ENDO 703abcd	Seminar: Review of Endodontic Literature	1-1-1-1
ENDO 704ab	Seminar: Surgical Endodontics	2-2
ENDO 705ab	Seminar: Endodontic Case Presentation	4-4
ENDO 710	Seminar: Endodontic Practice Management	2
ENDO 711	Alternatives in Endodontics	4
ENDO 761abcdef	Clinic: Advanced Endodontics	1-9 each
ENDO 790	Directed Research: Endodontics	1-12
PTHL 601	Advanced Oral Pathology Seminar	2

## Advanced Oral and Maxillofacial Surgery

The advanced education program in oral and maxillofacial surgery is a continuous 48-month course of study that prepares the graduate for the practice of oral and maxillofacial surgery. The program in oral surgery is accredited by the Commission on Dental Accreditation, a specialized accrediting body recognized by the Council on Postsecondary Accreditation and the United States Department of Education. The program also meets the requirements of the American Association of Oral and Maxillofacial Surgeons.

The program is conducted at the Ostrow School of Dentistry and at the LAC+USC Medical Center. The course provides graduates with the necessary background for certification by the American Board of Oral and Maxillofacial Surgery. Certificates are awarded upon successful completion of the 48-month course.

### Advanced Oral and Maxillofacial Surgery Curriculum

REQUIRED COURSES		UNITS
ADNT 702	Physical Diagnosis	2
ADNT 704c	Oral Biology	1
ADNT 710	Internship: Dental Education	1-5

PTHL 601	Advanced Oral Pathology Seminar	2
PTHL 701	Clinicopathologic Conference	3-12
SURG 701ab	Seminar: Advanced Oral Surgery	2-2
SURG 702ab	Seminar: Review of the Oral Surgery Literature	2-2
SURG 708ab	Orthognathic Surgery	2-2
SURG 761abcd	Clinic: Advanced Oral Surgery	1-10 each
SURG 763abcd	Clinic: Advanced Hospital Oral Surgery and Anesthesia	1-10 each

## Integrated M.D. Degree/Oral and Maxillofacial Surgery Certificate Program

The Ostrow School of Dentistry of USC and the Keck School of Medicine of USC offer a continuous 72-month integrated course of study leading to a medical degree in addition to a certificate in oral and maxillofacial surgery that prepares the graduate for the practice of oral and maxillofacial surgery. The program is fully integrated and will include advanced placement into the established medical school curriculum.

During the first three years, the student will function in the capacity of a medical student as well as a resident in the oral and maxillofacial surgery program. After the completion of the medical school curriculum, the M.D. degree will be awarded. This is required before the student can continue in the specially designed surgical internship portion of the program. At the completion of the surgical internship, the student is qualified for medical licensure. During the fourth through sixth year, all required rotations and surgical training will be completed to fulfill the educational requirements of the Commission of Dental Accreditation of the American Dental Association and the American Association of Oral and Maxillofacial Surgeons.

The program is conducted at the Schools of Dentistry and Medicine and at the LAC+USC Medical Center. The course of study provides the graduates with the necessary background for certification by the American Board of Oral and Maxillofacial Surgery. The oral and maxillofacial surgery certificates are awarded upon successful completion of the entire 72-month course.

## Advanced Orofacial Pain and Oral Medicine

The advanced orofacial pain and oral medicine program consists of a 24-month program leading to a certificate. This program can be combined with a Master of Science or a Ph.D. degree for the interested student but separate applications to these programs are required. The certificate curriculum is designed with a series of didactic courses where the students will gain knowledge about the diagnosis, pathobiology and treatment of different oral and maxillofacial diseases and disorders. In addition to these courses, the student will gain clinical experience diagnosing and treating patients with the following diseases: temporomandibular disorders; infectious, dysplastic, neoplastic proliferative, erosive and ulcerative oral and pharyngeal mucosal diseases as well as the common perioral-facial cutaneous diseases. The student will also learn about and work with patients who have various salivary, neurogenic, osseous, and odontogenic infections, tumors and diseases including oral neuropathic pain, oral spasticity, migraine, tension type and chronic daily headache disorders. This program has been accredited by the Commission on Dental Accreditation of the American Dental Association.

### Advanced Orofacial Pain and Oral Medicine Curriculum

REQUIRED COURSES		UNITS
ADNT 701	Research Methodologies in Dentistry	2
CBY 579L	Craniofacial Molecular Genetics	4
OFPM 701	CPR, Blood and Airborne Infections and Common Emergencies for Dental Residents	1
OFPM 702ab	Soft Tissue Disease for Dental Residents	1-2
OFPM 703	Local Anesthesia, Minor Surgery and Biopsy Procedures for Dental Residents	1
OFPM 704	Bony Pathology, Radiology and Advanced Imaging for Dental Residents	1
OFPM 705	Neurogenic Based Oral and Facial Pains for Dental Residents	2
OFPM 706	TMD, Orthopedics, Rheumatology and Physical Therapy for Dental Residents	2
OFPM 707	Pharmacology Series for Dental Residents	2

OFPM 708	Physical Evaluation and Laboratory Diagnostics for Dental Residents	2
OFPM 709	Headaches for Dental Residents	2
OFPM 721	Neurosciences for Dental Residents	2
OFPM 722	Internal Medicine and Systemic Disease for Dental Residents	2
OFPM 723	Systems Physiology, Motor Disorders and Sleep Apnea for Dental Residents	2
OFPM 724	Psychological and Psychometric Assessment for Dental Residents	2
OFPM 725	Epidemiology, Nutrition and Aging for Dental Residents	2
OFPM 726	Immunology and Immunosuppression for Dental Residents	2
OFPM 727	Infectious Disease, Oral Microbiology and Virology for Dental Residents	2
OFPM 728	Case Presentations by OFP-OM Residents	2

## Advanced Orthodontics

The advanced orthodontics certificate program is a 34-month course of study leading to a certificate in orthodontics and a Master of Science degree in craniofacial biology. The program in orthodontics is accredited by the Commission on Dental Accreditation of the American Dental Association, a specialized accrediting body recognized by the Council on Postsecondary Accreditation and the United States Department of Education. Upon completion of all requirements, the graduate is eligible for examination and certification by the American Board of Orthodontics.

The program has as its primary mission the preparation and training of residents for clinical practice in the specialty of orthodontics. This is achieved through a broad, in-depth curriculum designed to develop proficiency in clinical orthodontics with a solid foundation in fundamental and advanced biological and mechanical principles. Graduate-level courses in the basic sciences are the core didactic component of the program. Research is also an integral part of the program, and each resident must complete an original research project to fulfill a thesis requirement.

### Advanced Orthodontics/Craniofacial Biology Curriculum

REQUIRED COURSES		UNITS
ADNT 710	Internship: Dental Education	1-5
CBY 574	Statistical Methods in Bioexperimentation	3
CBY 578	Pathological Conditions of the Craniofacial Complex	3
CBY 579L	Craniofacial Molecular Genetics	4
CBY 585	Systematic Research Writing	3
CBY 590	Directed Research	3
CBY 594abz*	Master's Thesis	2-2-0
CBY 671	Epistemology and Ethos of Bioscience	2
ORTH 701ab	Cephalometrics: Growth and Development	2-4 each
ORTH 702	Seminar: Review of Orthodontic Literature	5
ORTH 703abcdefhi	Seminar: Advanced Orthodontics	2-8 each

ORTH 704abc**	Seminar: Orthodontics in Theory and Practice	2-2-2
ORTH 705abc	Orthodontic Practice Management	2-2-2
ORTH 706	Surgical Orthodontics	2
ORTH 707	Interdisciplinary Aesthetic Treatment	2
ORTH 708	Information Technology in Orthodontic Practice	2
ORTH 709	Advanced Information Technology in Orthodontic Practice	2
ORTH 721	Biomechanics and Orthodontic Technic	8
ORTH 751abcdefhi	Clinic: Advanced Orthodontics	1-10 each
PERI 752	Interdisciplinary Treatment: An Orthodontic Perspective	2

\*Students will be re-enrolled in CBY 594z until completion of the thesis. Tuition will be charged in each trimester of enrollment beyond Summer Session II.

\*\*Elective course

## Advanced Pediatric Dentistry

The advanced pediatric dentistry certificate program is a 24-month course of study designed to provide students with the background information and clinical experience necessary for the practice of pediatric dentistry. The program in pediatric dentistry is accredited by the Commission on Dental Accreditation, a specialized accrediting body recognized by the Council on Postsecondary Accreditation and the United States Department of Education. The program also meets the educational requirements of the American Board of Pediatric Dentistry.

First year studies emphasize advanced pediatric dentistry theory and clinical treatment of the "healthy" child. Students develop a sound basis in genetics, growth and development, nonpharmacologic and pharmacologic behavior management, physical evaluation, research methodology, statistics, interceptive orthodontics, prevention and a review of pediatric dental literature. Second year studies concentrate on dental care of children with physical, medical, mental and emotional disabilities. The second year student serves as a hospital-based resident at Childrens Hospital Los Angeles, Long Beach Memorial Medical Center or Children's Hospital of

Orange County. Residents also rotate to Rancho Los Amigos National Rehabilitation Center. Students gain experience in performing operating room procedures, oral conscious sedation, participating on interdisciplinary teams, providing emergency treatment and treating children with medical disabilities and pathologies in the hospital environment.

In addition to the two-year program, opportunities are available to combine the basic certificate program with a master's or doctoral degree in Craniofacial Biology (CBY).

The purpose of the combined pediatric dentistry/craniofacial biology program is to prepare highly qualified specialists in pediatric dentistry who can assume leadership positions in dental education, service to the community, dental research and dental care of children with developmental disabilities and medically compromising conditions. The structured curriculum of this three-year program offers a strong didactic component in basic biological science and in clinical sciences as well as intensive clinical pediatric dentistry training.

An individual who elects to apply to the combined program in craniofacial biology and advanced pediatric dentistry would submit a simultaneous application to the Ostrow School of Dentistry and the Graduate School. See the Craniofacial Biology section of this catalogue for further information. The first year of the program would be spent in craniofacial biology and the second and third years spent in the pediatric dentistry program. After successful completion of the craniofacial biology program the student would be reviewed by the Pediatric Dentistry Admissions Committee and admitted into the certificate program. The student must satisfactorily complete the Master of Science program to be eligible for the Pediatric Dentistry Certificate.

### Advanced Pediatric Dentistry Certificate

REQUIRED COURSES		UNITS
ADNT 701	Research Methodologies in Dentistry	2
ADNT 706	Seminar: Diseases of Childhood	2
ADNT 707	Behavior of the Child Patient	2
ADNT 710	Internship: Dental Education	1-5



AMED 750abc	Physical Evaluation and Anesthesia	2-2-1	PEDO 706	Dental Care for Pediatric Patients	2	PEDO 772abcde	Clinic: Interceptive Orthodontics	1-3 each
DMAT 701	Advanced Biomaterials	2	PEDO 707	Seminar: Cleft Palate Rehabilitation	1-9	PEDO 773	Hospital Pediatric Clinics	2-4
DPHR 701	Advanced Pharmacology	1	PEDO 708	Practice Management	1	PEDO 774	Clinical Genetics in Pediatric Dentistry	9
PEDO 701ab	Seminar: Advanced Pediatric Dentistry	8-15 each	PEDO 709	Conscious Sedation in Pediatric Dentistry	1	PEDO 790ab	Directed Research: Pediatric Dentistry	1-6 each
PEDO 702ab	Comprehensive Review of Pediatric Dentistry	5-7 each	PEDO 721	Pediatric Physical Evaluation	2			
PEDO 703abcde	Interceptive Orthodontics	2-5 each	PEDO 761abcde*	Clinic: Advanced Pediatric Dentistry	2-10 each			
PEDO 704ab	Prevention in Pediatric Dentistry	2-2	PEDO 771abcdef*	Clinic: Hospital Pediatric Dentistry	2-15 each			
PEDO 705	Pediatric Diseases	2						

\*In addition to the required courses, a combined minimum of 36 units of PEDO 761 and PEDO 771 must be satisfactorily completed, as directed by the program director.

## Advanced Periodontology

The advanced periodontology program offers two options: (1) a 36-month, 183-unit course of study leading to a certificate in periodontology, or (2) a dual 36-month, 183-unit program leading to both a certificate and a Master of Science in Craniofacial Biology.

The program in periodontology is accredited by the Commission on Dental Accreditation, a specialized accrediting body recognized by the Council on Postsecondary Accreditation, and the United States Department of Education. The program also meets the educational requirements of the American Board of Periodontology. Preparation for the certification process is an integral part of the curriculum, and all graduates are expected to become diplomates.

The curriculum provides a sound foundation in those basic sciences and medical subjects which apply directly to clinical periodontics. Emphasis is placed on the interaction of periodontics with other specialties and general dentistry. The central theme of the curriculum is that periodontology is the scientific basis to all of clinical dentistry.

The program is structured to produce skilled periodontists with the technical and scientific abilities to provide periodontal services to the community and to prepare students for teaching careers. This program also provides a portion of the requirements necessary for an advanced degree in a basic science.

A core oral biology curriculum combined with fundamentals of physical diagnosis, anatomy, pathology, microbiology, research interpretation and design, and pharmacology constitute the biological foundation upon which the advanced postdoctoral student builds his or her skills. The program provides knowledge and clinical expertise in all types of periodontal treatment required for the practice of oral health care including the placement and care of dental implants. Clinical experience in pharmacosedation and treatment of special care patients is available for those who are interested in these fields.

The program faculty believe that graduates should be dedicated to the concept of being a continuous student and should contribute to periodontics and to dentistry by practice, education, publication and/or research.

### Advanced Periodontology Certificate (183 units)

REQUIRED COURSES	UNITS	
ADNT 702	Physical Diagnosis	2
ADNT 703a-f, h-j	Seminar: Combined Treatment Planning	2 each
ADNT 704ab	Oral Biology	1-13 each
ADNT 710	Internship: Dental Education	1-5
AMED 750abc	Physical Evaluation and Anesthesia	2-2-1
ANAT 701	Advanced Head and Neck Anatomy	1
CBY 574	Statistical Methods in Bioexperimentation	3
CBY 575	Biologic Basis of Oral-Facial Disease	3
CBY 576	Biochemical Aspects of Periodontal Disease	3
CBY 585	Systematic Research Writing	3

CBY 590	Directed Research	6
CBY 674	Advanced Oral Microbiology	2
DHIS 701	Advanced Oral Histology	2
DPHR 701	Advanced Pharmacology	1
PERI 701ab	Seminar: Review of Current Periodontal Literature	2-3
PERI 702ab	Seminar: Periodontal Treatment Procedures	2-2
PERI 704a-f, h-j	Seminar: Periodontal Therapy	2 each
PERI 708	Seminar: Clinical Basis of Periodontics	4
PERI 710	Clinical Periodontal Photography	1
PERI 711	Occlusal Therapy in Periodontics	2
PERI 713a-f, h-j	Treatment Planning in Periodontics	2 each
PERI 716ab	Seminar: Special Topics in Periodontal Disease	3-3
PERI 750	Advanced Periodontal Instrumentation	3
PERI 752	Interdisciplinary Treatment: An Orthodontic Perspective	2
PERI 761a-f, h-j	Clinic: Advanced Periodontics	1-10 each
PTHL 601	Advanced Oral Pathology Seminar	2
REST 710abcd	Implant Dentistry	1-1-1-1
REST 782a-e	Clinic: Implant Prosthodontics	1-10 each

### Advanced Periodontology Certificate/M.S., Craniofacial Biology (183 units)

REQUIRED COURSES		UNITS
ADNT 702	Physical Diagnosis	2
ADNT 703a-f, h-j	Seminar: Combined Treatment Planning	2 each
ADNT 704ab	Oral Biology	1-13 each
ADNT 710	Internship: Dental Education	1-5
AMED 750abc	Physical Evaluation and Anesthesia	2-2-1
ANAT 701	Advanced Head and Neck Anatomy	1
CBY 574	Statistical Methods in Bioexperimentation	3
CBY 575	Biologic Basis of Oral-Facial Disease	3
CBY 576	Biochemical Aspects of Periodontal Disease	3
CBY 579L	Craniofacial Molecular Genetics	4
CBY 582L	Laboratory Methods	3

CBY 585	Systematic Research Writing	3
CBY 590	Directed Research	6
CBY 594ab	Master's Thesis	2-2
CBY 671	Epistemology and Ethos of Bioscience	2
CBY 674	Advanced Oral Microbiology	2
DHIS 701	Advanced Oral Histology	2
DPHR 701	Advanced Pharmacology	1
PERI 701ab	Seminar: Review of Current Periodontal Literature	2-3
PERI 702ab	Seminar: Periodontal Treatment Procedures	2-2
PERI 704a-f, h-j	Seminar: Periodontal Therapy	2 each
PERI 708	Seminar: Clinical Basis of Periodontics	4
PERI 710	Clinical Periodontal Photography	1

PERI 711	Occlusal Therapy in Periodontics	2
PERI 713a-f, h-j	Treatment Planning in Periodontics	2 each
PERI 716ab	Seminar: Special Topics in Periodontal Disease	3-3
PERI 750	Advanced Periodontal Instrumentation	3
PERI 752	Interdisciplinary Treatment: An Orthodontic Perspective	2
PERI 761a-f, h-j	Clinic: Advanced Periodontics	1-10 each
PTHL 601	Advanced Oral Pathology Seminar	2
REST 710abcd	Implant Dentistry	1-1-1-1
REST 782a-e	Clinic: Implant Prosthodontics	1-10 each

## Advanced Prosthodontics

The program in advanced prosthodontics is a 36-month course of study designed to teach didactic and clinical skills leading to competency in the specialized practice of prosthodontics. The program provides a basic science foundation for clinical and technical skills, incorporating studies in physical diagnosis, anatomy, oral pathology, pharmacology and oral biology. Proficiency in fixed, removable and implant prosthodontics will be developed during the course of study. There is a strong emphasis on applying principles of esthetics toward reconstructions and implant prosthodontics. Periodontally compromised patients are frequently encountered, so the program is allied with the advanced program in periodontics and integrated patient care is stressed.

A research methodology course and a research project are required. Technical skills essential to prosthodontics are basic to specialty practice and this aspect is emphasized. Clinical experience in implant placement and didactic study in maxillofacial prosthetics are offered: students who want more experience in clinical care may devote more time to treating these patients. The program in advanced prosthodontics is accredited by the Commission on Dental Accreditation, a special accrediting body recognized by the Council on Postsecondary Accreditation and the United

States Department of Education. The program also meets the requirements of the American Board of Prosthodontics. A certificate is awarded upon successful completion of the program.

### Advanced Prosthodontics Curriculum

REQUIRED COURSES		UNITS
ADNT 701	Research Methodologies in Dentistry	2
ADNT 702	Physical Diagnosis	2
ADNT 703abcdehfi	Seminar: Combined Treatment Planning	2 each
ADNT 704ab	Oral Biology	1-13 each
AMED 750abc	Physical Evaluation and Anesthesia	2-2-1
ANAT 701	Advanced Head and Neck Anatomy	1
CBY 575	Biologic Basis of Oral-Facial Disease	3
DMAT 701	Advanced Biomaterials	2
DPHR 701	Advanced Pharmacology	1
PTHL 601	Advanced Oral Pathology Seminar	2
REST 701	Orientation to Advanced Prosthodontics	5
REST 702abcdehfi	Seminar: Treatment Planning	2 each
REST 703abcdehfi	Seminar: Review of the Prosthodontic Literature – Fixed	1 each

REST 704abcdehfi	Seminar: Review of the Prosthodontic Literature – Removable	1 each
REST 705	Advanced Fixed Prosthodontics Techniques	1
REST 706	Advanced Complete Denture Techniques	1
REST 708ab	Dental Ceramics, Color, and Aesthetics	2-2
REST 709ab	Seminar: Removable Partial Dentures	1-2
REST 710ab	Implant Dentistry	1-1
REST 712	Maxillofacial Prosthodontics	2
REST 721ab	Principles of Occlusion	2-2
REST 761abcdehij	Clinic: Advanced Prosthodontics	1-10 each
REST 781	Clinic: Maxillofacial Prosthetics	1-8
REST 782abc	Clinic: Implant Prosthodontics	1-10 each
REST 790	Directed Research: Prosthodontics	1-12

## General Practice Residency

The general practice residency program is a 12-month, full-time residency program designed in conformance with the guidelines of the Council on Dental Education and the Commission on Dental Accreditation of the American Dental Association. The program is structured to increase diagnostic acumen, general knowledge and clinical ability in dentistry.

The program is conducted primarily at the Los Angeles County+USC Medical Center, one of the nation's largest teaching hospitals, and at the Veterans Administration Los Angeles Ambulatory Care facility in downtown Los Angeles. Some of the training is also conducted at Rancho Los Amigos Medical Center, West L.A. Veterans Administration Hospital, the Ostrow School of Dentistry of USC and other community facilities.

Under supervision of the faculties of the Ostrow School of Dentistry of USC, the Greater Los Angeles V.A. and the Keck School of Medicine of USC, the residents rotate through oral surgery, emergency medicine, anesthesia, operating room dentistry, care for the handicapped and other disciplines. Approximately 80 percent of the resident's time is devoted to delivery of oral health care and its management to the medically compromised patient.

The program emphasizes the treatment of a wide range of oral health disorders, medical considerations related to dental care, the ability to treat medically compromised and handicapped patients and teaches how to provide dental care in a hospital environment interacting with health care providers of various disciplines. Inherent in the year of training, a philosophy of practice addresses the medical psychosocial and oral health care needs of the patient.

Along with patient treatment, the residents are required to take courses in physical evaluation and anesthesia, endodontics, periodontics, dental implants, dental technology, maxillofacial prosthodontics, oral pathology and practice management. The residents are also required to present patient cases to the faculty.

Residents receive a monthly stipend during their training program and are granted a certificate upon satisfactory completion of the program.

The program in general practice is accredited by the Commission on Dental Accreditation, a specialized accrediting body recognized by the Council on Postsecondary Accreditation and the United States Department of Education.

## Advanced Education in General Dentistry Residency

The advanced education in general dentistry program is a 12-month, full-time residency program designed in accordance with the guidelines of the Council on Dental Education and the Commission on Dental Accreditation of the American Dental Association. A certificate is awarded upon satisfactory completion of the program.

The program is conducted primarily at the Ostrow School of Dentistry of USC, along with the Los Angeles County+USC Medical Center, one of the nation's largest teaching hospitals. Some of the training is also conducted at the USC Dental Clinic at the Union Rescue Mission and Ostrow School of Dentistry of USC Mobile Clinic.

The program is designed for the person who is planning a career in general dentistry in private practice, community health care environments, dental education, and/or an advanced specialty. Residents receive a monthly stipend during their training program.

An optional second year is available to individuals who have completed the first year of the program.

All clinical experiences are supervised by the faculty of the Ostrow School of Dentistry of USC and the Keck School of Medicine of USC. The program provides experience to residents in the delivery of comprehensive, multidisciplinary oral health care to healthy and medically compromised patients, including pediatric, adult and geriatric patients in private practice, hospital and community care settings.

The AEGD program is accredited by the ADA Commission on Dental Accreditation.

### Advanced Education in General Dentistry Certificate Curriculum

YEAR ONE REQUIRED COURSES (24 UNITS)		UNITS
ADNT 702	Physical Diagnosis	2
AEGD 701abc	Advanced Comprehensive Oral Health Care	2-3-3
AEGD 761abc	Advanced Comprehensive Oral Health Care Delivery I	1-1-2
AEGD 762ab	Hospital Oral Surgery and Anesthesia	1-1
AMED 750abc	Physical Evaluation and Anesthesia	2-2-1
DPHR 701	Advanced Pharmacology	1
REST 710ab	Implant Dentistry	1-1
YEAR TWO REQUIRED COURSES (12 UNITS)		UNITS
ADNT 710	Internship: Dental Education	3
AEGD 702abc	Review of Dental Literature	1-1-1
AEGD 764abc	Advanced Comprehensive Oral Health Care Delivery II	2-2-2

## Graduate Degrees

### Craniofacial Biology

Ostrow School of Dentistry of USC  
DEN 218  
(213) 740-1001  
(323) 442-1728  
FAX: (213) 740-2376  
Email: [paine@usc.edu](mailto:paine@usc.edu)

*Director:* Michael L. Paine, B.D.S., Ph.D.

#### Faculty

*Professors:* Yang Chai, D.D.S., Ph.D.; Casey Chen, D.D.S., Ph.D.; Cheng-Ming Chuong, M.D., Ph.D. (*Medicine*); Glenn Clark, D.D.S., Ph.D.; Paul Denny, Ph.D.; Tina Jaskoll, Ph.D.; Michael Melnick, D.D.S., Ph.D.; Cedric Minkin, Ph.D.; Mahvash Navazesh, D.M.D.; Hessam Nowzari, D.D.S., Ph.D.; Pragna Patel, Ph.D.; Michael Schneir, Ph.D.; Harold C. Slavkin, D.D.S.; Jorgen Slots, D.D.S., Ph.D.; Malcolm Snead, D.D.S., Ph.D.; David Warburton, M.D. (*Medicine*); Margarita Zeichner-David, Ph.D.

*Associate Professors:* Steven Goodman, Ph.D.; Robert Keim, D.D.S., Ph.D.; Anh Le, D.D.S., Ph.D.; Janet Oldak, Ph.D.; Michael Paine, B.D.S., Ph.D.; Sandra Rich, R.D.H., Ph.D.; Glenn Sameshima, D.D.S., Ph.D.; Songtao Shi, D.D.S., Ph.D.; Arnold Tiber, D.D.S., Ph.D.; Stephen Yen, D.M.D., Ph.D.; Homayoun Zadeh, D.D.S., Ph.D.

*Assistant Professors:* Roger De Filippo, M.D. (*Medicine*); Reyes Enciso, Ph.D.; Satish Kumar, D.D.S.; Matt Lee, M.D.; David McKemy, Ph.D.; Holly Moon, M.S., D.D.S.; Laura Perin, Ph.D.; Saravanan Ram, D.D.S.; Parish P. Sedghizadeh, M.S., D.D.S.; Wei Shi, M.D., Ph.D. (*Medicine*); Mark Urata, M.D., D.D.S.; Yan Zhou, Ph.D.

Craniofacial biology is concerned with the evolution, growth, structure and function of oral tissues and the oral region; and with the etiology and pathogenesis of numerous diseases and malformations. These involve studies at various levels of biological organization, from the molecular and subcellular to the organismic. Craniofacial biology comprises a large, rapidly increasing body of knowledge that has both clinical and academic importance.

The objective of the program is primarily, but not exclusively, to prepare health science graduates for entry into careers in academic environments as clinical scholars or as members of multidisciplinary teams of health professionals in academic centers of clinical and basic health science research.

#### Admission Requirements

The graduate program in craniofacial biology offers academic graduate training to individuals with a Doctor of Dental Surgery, Medical Doctor or equivalent degree. Applicants with Bachelor of Science degrees in areas such as biology and chemistry are also encouraged to apply.

#### Applications

Formal application to the USC Office of Graduate Admission and the graduate program in craniofacial biology is required for Master of Science and Doctor of Philosophy objectives.

All postsecondary transcripts are required and must be forwarded to the Office of Graduate Admission for application to either Master of Science or Doctor of Philosophy objectives. An undergraduate grade point average (GPA) of 3.0 or better, and a combined verbal and quantitative score of 1100 or better on the Graduate Record Examinations general test are required.

Three letters of recommendation describing academic abilities and personal attributes must be submitted on behalf of the applicant. Personal interviews may be required.

### Master of Science

This degree is under the jurisdiction of the Graduate School. Students should also refer to the Requirements for Graduation section, page 86, and the Graduate School section of this catalogue for general regulations, page 97. All courses applied toward the degree must be courses accepted by the Graduate School.

The Master of Science degree in craniofacial biology offers the clinician (D.D.S., M.D. or equivalent) the opportunity to obtain clinical research knowledge and skills in the area of craniofacial biology. Such training will include research into the causes of craniofacial diseases and anomalies, as well as normal development and function. The course of study is particularly directed toward those clinicians committed to pursuing a career in research and teaching.

#### Degree Requirements

A total of 32 units is required that includes eight courses in craniofacial biology, four units of 594ab Thesis and necessary units of 590 Thesis Research. All students must achieve a 3.0 grade point average in the craniofacial biology courses. Four core courses in craniofacial biology are required for all students: CBY 574, CBY 579L, CBY 585 and CBY 671. The four remaining courses required may be selected from any offered by the craniofacial biology program or other graduate programs and selected by the students and their mentors to best support their research interests. All students are required to complete a thesis based on the student's research following a thesis protocol approved by a committee of craniofacial biology faculty. An advisory committee, comprising the research advisor and

two additional faculty members, will establish thesis requirements to be completed by the student.

#### Graduate Certificate in Craniofacial Biology

The Certificate in Craniofacial Biology is intended to provide dentists in post-graduate dental education with experience in graduate education and insight into the requirements to complete a graduate degree. This will provide the students with additional information relative to selecting academic careers. All certificate students must have a dental degree and have been admitted to a post-graduate dental education program sponsored by the Ostrow School of Dentistry of USC.

**Degree Requirements**

A total of six CBY courses and 18 units of course work is required for the certificate. The six courses may be selected from the following list: CBY 573, CBY 574, CBY 575, CBY 576, CBY 577L, CBY 579L, CBY 583, CBY 585, CBY 587, CBY 672, CBY 673, CBY 674. The credit received for these classes may be applied toward either the M.S. or Ph.D. in Craniofacial Biology should the student decide later to pursue an advanced degree.

## Doctor of Philosophy

The Doctor of Philosophy degree in craniofacial biology is awarded under the jurisdiction of the Graduate School. Students should also refer to the Requirements for Graduation section, page 86, and the Graduate School section of this catalogue for general regulations, page 97. All courses applied toward the degree must be courses accepted by the Graduate School.

This program is designed to provide health science-oriented training for the professional with interests in academic, as well as clinical, aspects of craniofacial biology.

**New Student Orientation Committee**

All new students seeking Master of Science and/or Doctor of Philosophy degree objectives will be assigned to an orientation committee. This committee will function to advise and guide new students through their first semester. Thereafter, each student will identify a mentor and assemble a guidance committee.

**Guidance Committee**

During the second semester of study each graduate student should select a guidance committee. The guidance committee must include five faculty members who will be of assistance in the student's education. The student's mentor will serve as chair of the guidance committee. One committee member must be a USC faculty member from outside the program. The graduate program director will be *ex officio* a member of all guidance committees.

The guidance committee will monitor the student's progress, recommend readings or additional training, and determine when the student is ready for the qualifying examination. It is the student's responsibility to meet with the guidance committee at least once during every semester of each academic year. The results of these formal meetings should be summarized by the student in a written statement and submitted to the program director each semester.

**Admissions Criteria**

Only residents enrolled in advanced dental education and specialty programs will be eligible for the completion of the Certificate in Craniofacial Biology. Residents accepted into the following programs will be eligible: Advanced Education in General Dentistry, General Practice Residency, Endodontics, Orofacial Pain/Oral Medicine, Oral and

Maxillofacial Surgery, Orthodontics, Pediatric Dentistry, Periodontology, Prosthodontics. These residents must complete all the requirements for admission to the dental advanced education programs and have been accepted to these programs by the criteria established by the advanced dental education program faculty.

**Screening Procedure**

As soon as the student has satisfactorily completed the core courses and selected the committee, a screening meeting with the guidance committee should be called. The screening procedure may consist of an oral examination; the student will outline his research progress and be examined on academic development. The committee may recommend that the student take specific additional course work and that readings in certain areas be initiated to remedy deficiencies. A brief report will be given to the student and included in his or her file. The student will meet with the committee each semester; they shall agree when the student is prepared to take the qualifying examination in the next semester or if the student should resign or be dropped from the program.

**Course Requirements**

A total of 60 units is required for the Ph.D. Eight didactic courses at the graduate level are required. The core required CBY courses are CBY 574, CBY 579L, CBY 585 and CBY 587. The remaining graduate-level courses may be selected from courses offered by any department, following consultation with the graduate mentor and graduate program director. It is highly recommended that Ph.D. students take the PIBBS core curriculum on the Health Sciences campus. Students must achieve a 3.0 GPA or better in their course work. Students with a Doctor of Dental Surgery or other professional degree may be granted waivers for having completed equivalent course work.

It is the student's responsibility to obtain from the Graduate School the Request for Permission to Take the Ph.D. Qualifying Examination form which must be signed by all committee members. This form must be completed 60 days before the qualifying examination.

**Qualifying Examination**

The Ph.D. qualifying examination is offered during the fall or spring semesters. A written examination will cover specific subject areas of the core curriculum, as well as topics selected by the guidance committee. After successfully completing all parts of the written examination, the student will prepare and submit an original research proposal to the guidance committee which presents, in National Institutes of Health (NIH) format, the student's proposed dissertation research. If the submitted proposal is acceptable, an oral examination will be conducted. This examination will include a defense of the proposal and could also include material from the written examination and related topics. A student failing any part of the examination may be allowed one additional opportunity to pass that portion, at the discretion of the guidance committee, within the regulations of the Graduate School governing the repetition of qualifying examinations.

**Dissertation**

The doctoral dissertation is to focus upon an original research problem which reflects the creative scholarly abilities of the candidate and contributes to the general advancement of biological understanding, as well as to an understanding of the theoretical basis of disease and its treatment.

**Defense of the Dissertation**

An oral examination on a rough or final copy of the dissertation is conducted within one month following submission of the manuscript to the committee.

## Continuing Education

The Office of Continuing Education provides education courses, participation programs and national and international symposia in many areas of the dental profession. These educational activities are designed to offer updated and innovative concepts to dentists, dental hygienists, dental technicians and auxiliary personnel, and to provide the dental community with the opportunity for lifelong learning from outstanding scholars. In addition, the courses fulfill continuing education requirements of the California Board of Dental Examiners for relicensure of dentists and auxiliaries.

The Ostrow School of Dentistry of USC is a recognized American Dental Association (ADA) and a Continuing Education Recognition Program (CERP) provider.

Courses are given at regular intervals in the various subjects of dentistry: oral health, dental esthetics, oral medicine, physical diagnosis, dental materials, dental laboratory techniques, dental management, endodontics, periodontics, implants, oral surgery, restorative dentistry, fixed and removable prosthodontics, instrumentation, occlusion, oral pathology, dental hygiene, dental auxiliary education, patient education, pharmacology, principles

of dental practice, radiology, sedation and emergencies.

Information on schedules of classes may be obtained by writing to: Ostrow School of Dentistry of USC, Office of Continuing Education, Room 201J, University Park, Los Angeles, CA 90089-0641, (213) 821-2127, FAX: (213) 740-3973, email [cedental@usc.edu](mailto:cedental@usc.edu) or refer to the school's Website at [www.uscdentalce.org](http://www.uscdentalce.org).

## Courses of Instruction

The terms indicated are *expected* but are not *guaranteed*. For the courses offered during any given term, consult the *Schedule of Classes*.

### DENTISTRY (DENT)

#### DENT 221 Introduction to Dentistry (1)

History and current role of dental science in the health services field; review of research; overview of dental procedures with laboratory experience and practice observation.

#### DENT 402 Formal Science-Writing (2)

A scientist-taught, lecture-workshop-tutorial format for developing skills in formal science-writing (e.g., abstracts, journal articles, grants). Not open to students in the School of Dentistry. *Prerequisite*: upper division standing in science and preprofessional majors.

#### DENT 412 Fundamentals of Craniofacial and Dental Technology (3, Sp)

Biomedical engineering and technology applied to oral health professions. Dental biomaterials, CAD-CAM, digital dental technology and tissue engineering applications to craniofacial diseases, disorders, and enhancements. Junior standing. (Duplicates credit in former BME 412.)

### ADVANCED DENTAL EDUCATION CONJOINT PROGRAM (ADNT)

#### ADNT 701 Research Methodologies in Dentistry (2)

Critical evaluation of the scientific principles in the development, execution, and interpretation of methodologies used in dentistry.

**ADNT 702 Physical Diagnosis (2)** Didactic and clinical experience in physical diagnosis relevant to practice of the dental specialties. Lecture, 1 hour; demonstration, 1 hour.

**ADNT 703abcdehij Seminar: Combined Treatment Planning (2 each)** Interdisciplinary consideration of complex cases which involve several of the dental specialties.

#### ADNT 704abc Oral Biology (1-13 each)

Interdisciplinary consideration of contemporary biology of the cell, bone, teeth, periodontium, occlusion, dental pulp, pain and human growth and development.

#### ADNT 706 Seminar: Diseases of Childhood (2)

Intraoral hard and soft tissue pathologic conditions in children, common bacterial and viral diseases and their transmission in the pediatric dental environment. Seminar, 2 hours. Graded CR/NC.

#### ADNT 707 Behavior of the Child Patient (2)

Child and adolescent psychological growth and development: Human communication, needs, motivation, and learning. Critical analysis of patient management, team treatment, and practice administration. Lecture, 2 hours.

#### ADNT 710 Internship: Dental Education (1-5)

Practical experience teaching predoctoral students. Units and hours variable.

### ADVANCED EDUCATION IN GENERAL DENTISTRY (AEGD)

#### AEGD 701abc Advanced Comprehensive Oral Health Care (2-3-3)

Comprehensive, multidisciplinary oral health care delivery concepts and methods for the general dentist. Registration limited to students in the AEGD certificate program, Year 1. Graded CR/NC.

#### AEGD 702abc Review of Dental Literature (1-1-1)

Comprehensive review of relevant dental literature pertaining to advanced comprehensive, multidisciplinary oral health care delivery for the general dentist. Registration limited to students in AEGD certificate program, Year 2. Graded CR/NC.

#### AEGD 761abc Advanced Comprehensive Oral Health Care Delivery I (1-1-2)

Clinical applications of comprehensive, multidisciplinary oral health care delivery concepts and techniques for the first year AEGD resident. Registration limited to students in AEGD certificate program, Year 1. Graded CR/NC.

#### AEGD 762ab Hospital Oral Surgery and Anesthesia (1-1)

Clinical applications of advanced oral surgery and maxillofacial prosthetics, pharmacology, and anesthesia in a hospital setting. Registration limited to students in AEGD certificate program, Year 1. Graded CR/NC.

#### AEGD 764abc Advanced Comprehensive Oral Health Care Delivery II (2-2-2)

Clinical applications of comprehensive, multidisciplinary oral health care delivery concepts and techniques for the second year AEGD resident. Registration limited to students in AEGD certificate program, Year 2. Graded CR/NC.

**ANATOMY (ANAT)****ANAT 321 Head and Neck Anatomy (2)**

Anatomy of the head and neck with lecture and laboratory demonstration for dental hygienists.

**ANAT 501 Functional Neuroanatomy-Neurophysiology (3)** Structure and function of the human nervous system. Includes participation in neurology clinics at LAC+USC Medical Center.

**ANAT 521 Head and Neck Anatomy (2, Fa)**

Detailed morphology of the head and neck emphasizing considerations applicable to dentistry; morphology of the thorax; osteology of the skull.

**ANAT 522 Systemic Human Anatomy (3)**

Structure and function of the human body; organ systems and morphology of the abdomen and pelvis; axilla and arm; osteology of the skull.

**ANAT 523 Head and Neck Dissection (1)**

Laboratory experience in dissection of the structures of the human head and neck with emphasis on the osteology and morphology of the face.

**ANAT 701 Advanced Head and Neck Anatomy (1)**

Detailed study of structure and function of the orofacial region including recent research and advances in dentistry.

**ANAT 722 Advanced Head and Neck**

**Anatomy Laboratory (1)** Dissection of the head and neck with emphasis on the osteology and morphology of the face. *Prerequisite:* ANAT 701 enrollment.

**ANESTHESIA AND MEDICINE (AMED)****AMED 421 Seminar: Teaching Local Anesthesia (1)**

Techniques of teaching local anesthesia to dental hygiene students.

**AMED 502 Emergency Medicine (2)** Recognition and management of life-threatening emergencies, including unconsciousness, altered consciousness, respiratory distress, convulsions, drug-related emergencies, and chest pain.

**AMED 523 Pharmacosedation II (1)** Introduction to intravenous sedation; evaluation of patient, selection of technique and procedure; prevention of complications, recognition and management of complications; introduction to general anesthesia.

**AMED 524 Pain and Anxiety Control (2, Sp)**

Theory and techniques for pain control, anxiety includes: local anesthetics; drugs, adjunctive premedication, techniques in oral, rectal, intramuscular, inhalation sedation, prevention, management of complications. (Duplicates credit in the former AMED 521 and AMED 522.)

**AMED 605abcde Seminar: Intravenous**

**Sedation (0-0-0-0-4)** Review of the literature and a selection of case studies in intravenous sedation.

**AMED 606abcde Clinical Intravenous**

**Sedation (0-0-0-0-3)** Management of patients receiving intravenous sedation, including physical evaluation, patient monitoring, recognition and management of unconscious airway and emergency situations; IV sedation procedures.

**AMED 610 Physical Diagnosis/Cardiology**

**(1)** Participation in the Cardiac Clinic at LAC+USC Medical Center; experience in cardiac auscultation, abnormal breath sounds, use of cardiac drugs, and prosthetic valve management.

**AMED 613abcde Clinic: Intravenous**

**Sedation (0-0-0-0-3)** Clinical experience in intravenous sedation including physical evaluation, patient monitoring, and management of unconscious airway. *Prerequisite:* AMED 606e.

**AMED 750abc Physical Evaluation and**

**Anesthesia (2-2-1)** In-depth examination of physical evaluation, emergency medicine, basic life support, inhalation sedation, intravenous sedation, local anesthesia, and patient monitoring; includes clinical experience.

**BIOCHEMISTRY (DBIO)****DBIO 310 Oral Biochemistry (2, Fa)**

Biochemical insight into oral tissues and saliva — emphasizing anti-microbial protection (systemic and therapeutic) against demineralization and connective tissue destruction.

**DBIO 501 Biochemistry and Molecular**

**Biology (2)** Biochemical properties of carbohydrates, lipids, amino acids, proteins, and nucleic acids — emphasizing molecular structure-function interrelatedness, integrated metabolism, and molecular biology of the cell.

**CRANIOFACIAL BIOLOGY (CBY)**

**CBY 561 Molecular Genetics (4, Sp)** (Enroll in INTD 561)

**CBY 571 Biochemistry (4, Fa)** (Enroll in INTD 571)

**CBY 573 Molecular Embryology (4)** Principles of developmental biology; emphasis on molecular genetics and cell and molecular mechanisms of tissue interaction and morphodifferentiation.

**CBY 574 Statistical Methods in Bioexperimentation (3)**

Experimental design and analysis as applied to all levels of biologic organization; hypothesis construction; probability; univariate and multivariate analysis; basic epidemiology.

**CBY 575 Biologic Basis of Oral-facial**

**Disease (3, FaSpSm)** Cell and molecular biology of oral tissues in disease: emphasis on immunopathology. (Duplicates credit in former CBY 575a).

**CBY 576 Biochemical Aspects of Periodontal Disease (3, FaSpSm)**

Cell and molecular biology of oral tissues in disease; emphasis on molecular oral pathology. (Duplicates credit in former CBY 575b).

**CBY 577L Principles of Teratology (4)**

Environmental factors associated with human congenital malformations; emphasis on drug-induced birth defects; limited laboratory using avian and mammalian animal models.

**CBY 578 Pathological Conditions of the**

**Craniofacial Complex (3, FaSpSm)** Acquired and inherited, systemic and local disease resulting in clinical craniofacial morbidity: cellular and molecular expression as related to etiology, diagnosis, treatment, and prognosis.

**CBY 579L Craniofacial Molecular Genetics**

**(4)** Principles and methodologies of mammalian molecular genetics; laboratory exercises applied to pre- and postnatal craniofacial growth and development.

**CBY 580ab Seminars in Craniofacial Biology**

**(2-2)** Seminars presented by recognized researchers in the various disciplines relating to craniofacial biology; selected readings in preparation for discussion. Graded CR/NC.

**CBY 582L Laboratory Methods (3)** Contemporary methods of laboratory analysis, including theoretical and practical exposure to procedures and equipment in the research laboratory.

**CBY 583 Craniofacial Clinical Genetics (4)**

Principles of human genetics; clinically oriented normal and abnormal human embryology; diagnosis and natural history of human craniofacial birth defects; genetic counseling and bioethics.

**CBY 585 Systematic Research Writing**

**(3, FaSpSm)** Enhancement of critical research thinking by fulfilling anticipated conceptual components of the journal article; perfection of writing skills by correcting inter- and intrasentence flaws.

**CBY 586x Scientific Writing Practicum (3)**

Development of writing skill while completing a discipline-required project (proposal, dissertation, journal article). Seminar and tutorial format. Not for graduate credit.  
*Prerequisite:* CBY 585 or DENT 402.

**CBY 587 Cell and Molecular Biology of Craniofacial Tissues (3)**

Contemporary cell and molecular biology as applied to the development, structure, and function of craniofacial tissues.

**CBY 590 Directed Research (1-12)**

Research leading to the master's degree. Maximum units which may be applied to the degree to be determined by the department. Graded CR/NC.

**CBY 594abz Master's Thesis (2-2-0)**

Credit on acceptance of thesis. Graded IP/CR/NC.

**CBY 599 Special Topics (2-4, max 8)**

Seminars on craniofacial biology in subject areas of special interest to faculty and students.

**CBY 671 Epistemology and Ethos of Bioscience (2)**

Classical and contemporary thought on knowledge acquisition, truth, and method as applied to bioscience; characteristic spirit, beliefs, and moral assumptions of bioscientists in modern history.

**CBY 672 Advances in Development and Differentiation (2)**

Integration of recent advances in cell and molecular developmental biology into classical and emerging thematic frameworks.

**CBY 673 Biomineralization (2)**

Fundamental principles and mechanisms of matrix mediated biomineralization in model systems from bacteria to humans.

**CBY 674 Advanced Oral Microbiology (2)**

Cell and molecular aspects of microbiology as applied to oral infections: microbial physiology and genetics; oral microbial ecology; host resistance factors in oral infections.

**CBY 790 Research (1-12)** Research leading to the doctorate. Maximum units which may be applied to the degree to be determined by the department. Graded CR/NC.

**CBY 794abcdz Doctoral Dissertation**

**(2-2-2-2-0)** Credit on acceptance of dissertation. Graded IP/CR/NC.

**COMMUNITY DENTISTRY (CMDT)****CMDT 501 Introduction to Community Dentistry Programs (1)**

Lectures and practical field experiences introducing the role of the dentist in a variety of organized public health programs.

**CMDT 502ab Contemporary Dental Practice (2-2)**

Economic, legal, and professional aspects of dental practice; alternative careers in dentistry.

**CMDT 507abc Ethical Issues in the Practice of Dentistry (0-0-1)**

Examination of the major ethical issues in the current practice of dentistry; study of effective and proper methods of addressing the issues.

**CMDT 601 Mobile Clinic (1)**

Clinic experience in provision of dental care for children of low income agricultural workers through use of mobile dental clinic on location.

**CMDT 603 Multiphasic Experiences in Extramural Dentistry (1)**

Community responsibilities of dentists in a dynamic society. Practical experiences include consultations and visitations to private offices, group practices, hospitals, and neighborhood health clinics.

**CMDT 606 Business Principles in Dentistry (2)**

Overview of basic business administration principles, including economics, accounting, marketing, finance, entrepreneurship, and strategic planning as relevant to the practice of dentistry.

**CMDT 607abc Sports Dentistry (0-0-2)**

The role of the dentist in prevention, diagnosis, and treatment of sports related dental trauma; recognition and correct referral of sports injuries and medical problems; clinical treatment of athletes including exposure to cerebral concussion, hypothermia, heat stroke and Sudden Death Syndrome.

**CMDT 608abc Community Service (0-0-1)**

Two one-hour seminars plus four separate days of field experience. Participate in health fairs, classroom screening, health education, career counseling, and other community projects.

**DENTAL HYGIENE (DHYG)****DHYG 311ab Fundamentals of Clinical Dental Hygiene Practice (3-3)**

Principles and techniques of clinical dental hygiene with emphasis on preventive dentistry; laboratory and preclinical experience in techniques of complete oral prophylaxis services; and clinical application thereof.

**DHYG 314L Dental Morphology Laboratory (1)**

Fundamentals of tooth morphology and characteristics of the deciduous and permanent dentition. Laboratory, 3 hours.

**DHYG 316 Patient Education in Preventive Dental Care (1)**

Principles and methods for teaching and motivating patients to practice effective oral care.

**DHYG 318 Dental Specialties (2)**

Procedures performed in selected dental specialty areas with emphasis on the role of the dental hygienist.

**DHYG 320 Preventive Dental Therapy (2, Sp)**

Study of etiology, risk factors and preventive management of periodontal disease and dental caries. Setting up community and individual preventive oral health care programs.

**DHYG 401 Introduction to Advanced Dental Hygiene (2)**

Principles and techniques of advanced dental hygiene with emphasis on advanced root instrumentation and dental hygiene treatment planning.

**DHYG 410abc Clinic: Dental Hygiene (2-7 each)**

Application of advanced techniques with emphasis on increased proficiency in skills: principles of prevention; periodontal examination; root planing; soft tissue curettage; local anesthesia; inhalation sedation.

**DHYG 411ab Dental Literature Review (2-2)**

Seminar-discussion and analysis of current dental literature in selected topics related to dental hygiene practice.

**DHYG 412 Preventive Dental Care Programs (1)**

Methods for development and implementation of programs involved with the delivery of preventive dental care.

**DHYG 413ab Dental Hygiene Educational Concepts (2-2)**

Educational concepts for development of dental hygiene curriculum, including teaching and learning strategies, curriculum design, course development and evaluation methods.

**DHYG 414ab Advanced Dental Hygiene (2-2)**

Advanced dental hygiene techniques: treatment, referral and maintenance of the advanced periodontitis patient emphasizing treatment planning and patient management.



**DHYG 415ab Directed Clinical Teaching (2-2)**

Experience in clinical teaching with supervision and evaluation of undergraduate dental hygiene and doctoral dental students engaging in patient care.

**DHYG 417 Issues in Dental Health Care Delivery (1)**

Study of current trends in public health care delivery, manpower, finance mechanisms, and quality assurance.

**DHYG 422 Essentials of Dental Hygiene Practice (1)**

A review of the moral, legal, and ethical responsibilities of the dental hygienist. Other topics: securing a position, dental economics, taxes, insurance, and human relationships in the dental office. Lecture, 1 hour.

**DHYG 424ab Research Methods (1-1)**

Critical evaluation of scientific literature; techniques of writing and coordinating scientific information for research papers; techniques for preparation of scientific table clinics. Graded IP.

**DHYG 430 Seminar: Initial Periodontal Therapy (2)**

Presentation of selected clinical cases with documentation of clinical findings, diagnosis, treatment planning, and therapy.

**DHYG 431 Seminar: Periodontal Treatment Planning (2)**

Periodontal treatment planning; case presentations of uncomplicated periodontitis progressing to complex treatment involving multidisciplinary approach.

**DHYG 460abcd Clinic: Advanced Dental Hygiene (2-2-1-1)**

Clinical experience in advanced dental hygiene; preventive and therapeutic skills with emphasis on advanced periodontal instrumentation and expanded functions for the registered dental hygienist.

**DHYG 516ab Community Oral Health (2, Fa; 2, Sp)**

*a*: Introduction of core concepts, values, and methods of dental public health practice as it relates to the dental hygienist. *b*: Strategies for implementation and evaluation of community health programs.

**ORAL DIAGNOSIS AND RADIOLOGY (DIAG)****DIAG 415 Radiographic Techniques (1)**

Clinical application of radiographic chairside and dark room techniques and quality control.

**DIAG 521 Principles of Oral Radiology (2)**

Introduction to ionizing radiation and its use in the health professions; radiation biology, physics and hygiene; descriptive terms used in radiography, with illustrations; documentation.

**DIAG 522 Radiographic Techniques (1)**

Clinical applications of radiographic chairside and darkroom techniques; quality control and evaluation of the radiograph.

**DIAG 523 Oral Maxillofacial Imaging (2, Sm)**

Clinical application of intraoral and extraoral radiographic techniques; emphasis upon radiation physics, biology, safety, film and digital imaging and image interpretation.

**DIAG 615 Digital and Oral Maxillofacial Imaging (2-4, FaSp)**

Introduction to computer based imaging in dentistry. Student will learn to use video cameras, scanners, intraoral sensors and advanced imaging technology. Open to dentistry and dental hygiene majors only. *Prerequisite*: DIAG 521, DIAG 522.

**DIAG 621 CAD/CAM in Dentistry (1)**

Modern principles of dental Computer Assisted Design/Computer Assisted Manufacturing and will fabricate such restorations in the laboratory.

**DENTAL MATERIALS (DMAT)****DMAT 316L Dental Materials and Clinical Procedures (2)**

Biomechanical principles, properties, and manipulation of dental materials; armamentarium for various dental procedures.

**DMAT 505 Dental Materials Update (1)**

Biocompatibility of dental materials, restorative materials and techniques update, critical analysis of published literature. Includes specific laboratory testing research methodology and design of clinical trials.

**DMAT 521ab Dental Materials (2-2)**

Properties, biomechanical function, manipulation, and clinical application of dental materials. Correlates restorative, biological, and materials sciences.

**DMAT 701 Advanced Biomaterials (2)**

Fundamental principles of materials science and clinical dentistry relative to proper selection and manipulation of dental materials.

**DENTAL PROBLEM BASED LEARNING (DPBL)****DPBL 501abc Dental Problem Based Learning — Human Structure I (3-3-3, FaSpSm)**

Problem based learning presentation of normal and abnormal structures including anatomy, cell biology, embryology, histology, pathology from cells, tissues and organs of the human body. All material discussed with direct relationship to a well-characterized human clinical case. Acceptance to D.D.S. program required.

**DPBL 502abc Dental Problem Based Learning — Human Function I (8-8-8, FaSpSm)**

Problem based learning presentation of normal and abnormal function including biochemistry, endocrinology, genetics, immunology, microbiology, nutrition, pharmacology, physiology from cells, tissues and organs of the human body. All material discussed with direct relationship to a well-characterized human clinical case. Acceptance to D.D.S. program required.

**DPBL 503abc Dental Problem Based Learning — Human Behavior I (2-2-2, FaSpSm)**

Problem based learning presentation of normal and abnormal behavior including communication, ethics, multiculturalism, patient management, phobias associated with treatment of patients with and without special needs. All material discussed with direct relationship to a well-characterized human clinical case. Acceptance to D.D.S. program required.

**DPBL 504abc Dental Problem Based Learning — Human Clinical Dentistry I (4-4-4, FaSpSm)**

Problem based learning approach to the delivery of dental health care. Didactic, preclinical and clinical principles of endodontics, geriatrics, oral diagnosis, oral pathology, oral radiology, oral surgery, orthodontics, pediatric dentistry, periodontics, prosthodontics and restorative dentistry will be presented with a direct relationship to a well-characterized human clinical case. Acceptance to D.D.S. program required.

**DPBL 511abc Dental Problem Based Learning — Human Structure II (2-2-2, FaSpSm)**

Problem based learning presentation of normal and abnormal structures including anatomy, cell biology, embryology, histology, pathology from cells, tissues and organs of the human body. All material discussed with direct relationship to a well-characterized human clinical case. *Prerequisite*: DPBL 502c.

**DPBL 512abc Dental Problem Based Learning — Human Function II (5-5-5, FaSpSm)**

Problem based learning presentation of normal and abnormal function including biochemistry, endocrinology, genetics, immunology, microbiology, nutrition, pharmacology, physiology from cells, tissues and organs of the human body. All material discussed with direct relationship to a well-characterized human clinical case. *Prerequisite*: DPBL 502c.

**DPBL 513abc Dental Problem Based Learning — Human Behavior II (3-3-2, FaSpSm)**

Problem based learning presentation of normal and abnormal behavior including communication, ethics, multiculturalism, patient management, phobias associated with treatment of patients with and without special needs. All material discussed with direct relationship to a well-characterized human clinical case. *Prerequisite:* DPBL 502c.

**DPBL 514abc Dental Problem Based Learning — Human Clinical Dentistry II (7-7-8, FaSpSm)**

Problem based learning approach to the delivery of dental health care. Didactic, preclinical and clinical principles of endodontics, geriatrics, oral diagnosis, oral pathology, oral radiology, oral surgery, orthodontics, pediatric dentistry, periodontics, prosthodontics and restorative dentistry will be presented with a direct relationship to a well-characterized human clinical case. *Prerequisite:* DPBL 504c.

**DPBL 521abc Dental Problem Based Learning — Human Structure III (1-1-1, FaSpSm)**

Problem based learning presentation of normal and abnormal structures including anatomy, cell biology, embryology, histology, pathology from cells, tissues and organs of the human body. All material discussed with direct relationship to a well-characterized human clinical case. *Prerequisite:* DPBL 511c.

**DPBL 522abc Dental Problem Based Learning — Human Function III (1-1-1, FaSpSm)**

Problem based learning presentation of normal and abnormal function including biochemistry, endocrinology, genetics, immunology, microbiology, nutrition, pharmacology, physiology from cells, tissues and organs of the human body. All material discussed with direct relationship to a well-characterized human clinical case. *Prerequisite:* DPBL 512c.

**DPBL 523abc Dental Problem Based Learning — Human Behavior III (1-1-1, FaSpSm)**

Problem based learning presentation of normal and abnormal behavior including communication, ethics, multiculturalism, patient management, phobias associated with treatment of patients with and without special needs. All material discussed with direct relationship to a well-characterized human clinical case. *Prerequisite:* DPBL 502c.

**DPBL 524abc Dental Problem Based Learning — Human Clinical Dentistry III (14-14-14, FaSpSm)**

Problem based learning approach to the delivery of dental health care. Didactic, preclinical and clinical principles of endodontics, geriatrics, oral diagnosis, oral pathology, oral radiology, oral surgery, orthodontics, pediatric dentistry, periodontics, prosthodontics and restorative dentistry will be presented with a direct relationship to a well-characterized human clinical case. *Prerequisite:* DPBL 502c.

**DPBL 531ab Dental Problem Based Learning — Human Structure IV (1-1, FaSp)**

Problem based learning presentation of normal and abnormal structures including anatomy, cell biology, embryology, histology, pathology from cells, tissues and organs of the human body. All material discussed with direct relationship to a well-characterized human clinical case. *Prerequisite:* DPBL 502c.

**DPBL 532ab Dental Problem Based Learning — Human Function IV (1-1, FaSp)**

Problem based learning presentation of normal and abnormal function including biochemistry, endocrinology, genetics, immunology, microbiology, nutrition, pharmacology, physiology from cells, tissues and organs of the human body. All material discussed with direct relationship to a well-characterized human clinical case. *Prerequisite:* DPBL 512c.

**DPBL 533ab Dental Problem Based Learning — Human Behavior IV (1-1, FaSp)**

Problem based learning presentation of normal and abnormal behavior including communication, ethics, multiculturalism, patient management, phobias associated with treatment of patients with and without special needs. All material discussed with direct relationship to a well-characterized human clinical case. *Prerequisite:* DPBL 523c.

**DPBL 534ab Dental Problem Based Learning — Human Clinical Dentistry IV (13-13, FaSp)**

Problem based learning approach to the delivery of dental health care. Didactic, preclinical and clinical principles of endodontics, geriatrics, oral diagnosis, oral pathology, oral radiology, oral surgery, orthodontics, pediatric dentistry, periodontics, prosthodontics and restorative dentistry will be presented with a direct relationship to a well-characterized human clinical case. *Prerequisite:* DPBL 502c.

**ENDODONTICS (ENDO)**

**ENDO 501 Clinical Endodontics (1)** Diagnosis and treatment procedures for basic clinical endodontics, including management of endodontic emergencies; relationship of endodontics to the various dental disciplines.

**ENDO 502 Advanced Endodontics (1)** Theoretical principles for the treatment of advanced endodontic cases; alternative methods of endodontic therapy; introduction to interspecialty cases.

**ENDO 521 Preclinical Endodontics (3)** Theoretical principles of endodontic therapy related to pulpal and periapical disease; training in procedures of localizing, preparing, and filling the root canal of human teeth.

**ENDO 562abcd Clinic: Concentrated Early Endodontics (0-0-0-1)** Early clinical experience including assigned clinic demonstration block.

**ENDO 563ab Clinic: Endodontic Therapy (0-2)** Clinical experience emphasizing diagnosis, treatment planning, and endodontic patient management.

**ENDO 610 Clinical Advanced Endodontics (2)** In-depth discussion of endodontic surgery, retreatment, and hemisection cases; includes clinical experience in advanced endodontic cases.

**ENDO 701abcd Seminar: Biological Basis of Endodontic Therapy (1-1-1-1)** Investigation of the theoretical and biological bases of clinical endodontic procedures.

**ENDO 702 Seminar: Advanced Clinical Endodontics (2)** Course designed to train students in the management of simple and complex endodontic cases.

**ENDO 703abcd Seminar: Review of Endodontic Literature (1-1-1-1)** Critical review and analysis of classical and current endodontic literature.

**ENDO 704ab Seminar: Surgical Endodontics (2-2)** Indications, principles, and techniques of surgical endodontics.

**ENDO 705ab Seminar: Endodontic Case Presentation (4-4)** Student presentation of cases for critique and analysis.

**ENDO 710 Seminar: Endodontic Practice Management (2)** Organizing, staffing, and evaluation of an endodontic practice. Modes and patterns of management including use of auxiliaries. Emphasis on endodontist-general practitioner relationship; legal aspects of dental practice. Seminar, 2 hours.

**ENDO 711 Alternatives in Endodontics (4)** Alternative endodontic techniques presented by guest clinicians. Emphasis on endodontics and its relationship with periodontal, restorative, and surgical disciplines.

**ENDO 761abcdef Clinic: Advanced Endodontics (1-9 each)** Advanced clinical experience emphasizing the diagnosis and management of complicated endodontic cases.

**ENDO 790 Directed Research: Endodontics (1-12)** Principles of planning, organizing, and executing a clinical or educational research project. Graded CR/NC.

**FIXED PROSTHODONTICS (FPRO)**

**FPRO 520 Preclinical Fixed Prosthodontics (ISP) (2)** Basic fundamentals of fixed prosthodontics; preparation for clinical procedures in posterior PFM's, posterior mandibular FPD's and in restoring endodontically treated teeth.

**FPRO 521 Preclinical Fixed Prosthodontics I (3)** Fundamentals and principles of posterior prosthodontic procedures, including diagnosis, biomechanic principles, and construction of fixed prosthodontic restorations.

**FPRO 522 Preclinical Fixed Prosthodontics II (3)** Fundamentals of aesthetic restorations; fabrication of posterior and anterior porcelain-fused-to-metal restorations and anterior porcelain jacket crown; restoration of endodontically treated teeth.

**FPRO 561abcd Clinic: Fixed Prosthodontics I (0-0-0-3)** Clinical application of fixed prosthodontic principles in patient treatment.

**FPRO 562ab Clinic: Fixed Prosthodontics II (0-3)** Clinical application of fixed prosthodontic principles in patient treatment.

**FPRO 601 Advanced Fixed Prosthodontics (4)** Critical review and evaluation of the fixed prosthodontic literature; guided experience in the laboratory and clinical phases of fixed prosthodontic therapy.

**GERIATRIC AND SPECIAL PATIENT DENTISTRY (GSPD)**

**GSPD 504 Dental Treatment of the Geriatric and Special Patient (2)** Social, psychological, economic and health factors which influence dental care for the geriatric and special patient populations; specific considerations and modifications of conventional dental treatment.

**GSPD 562abc Clinic: Geriatric Dentistry (0-0-1)** Clinical experience in dental treatment of geriatric patients at an extramural site.

**GSPD 563abc Clinic: Special Patient Care (0-0-1)** Clinical experience in treatment of the physically, medically, or mentally disabled patient.

**GSPD 610 Clinical Gerontology (1)** Clinical application of principles of geriatric dentistry. Evaluation, treatment planning, and clinical care of elderly patients at residential and skilled-nursing care facilities.

**GSPD 612 Special Patient Care Clinic (1)**

Clinical experience in the evaluation, diagnosis, treatment planning and management of oral problems in special needs patients.

**HISTOLOGY (DHIS)**

**DHIS 310 Basic Tissues and Histology and Embryology (2, Fa)** Histology of basic tissues, oral histology, orofacial embryology, orofacial clefts and functional correlates.

**DHIS 701 Advanced Oral Histology (2)** Microscopic anatomy, ultrastructure and histochemistry of developing and functional oral tissues; based on recent advanced in oral LM, TEM, and SEM histology.

**HUMAN BEHAVIOR (HBHV)****HBHV 310 Interactional Skills in Dental**

**Hygiene (1)** Training in the application of behavioral and communication skills.

**HBHV 501 Behavioral Skills in Dentistry (1)** Introduction to key personal, interpersonal, and professional factors that shape the doctor-patient relationship; ways interactional skills influence the effectiveness, durability, and satisfaction of the doctor-patient relationship.

**HBHV 502 Interactional Skills (1)** Introduction to purpose, objectives, and principles of clinical interviewing.

**HBHV 504 Patient Education and Management (1)** Management of difficult patients; psychology and behavioral treatment of pain; patient education of treatment planning; smoking cessation program.

**HBHV 550 Communications in Clinical Dentistry (1)** Verbal and nonverbal communication in clinical dentistry; clinical experience in use of manual, verbal, and non-verbal communication skills during a traumatic injection procedure.

**HBHV 561abcde Clinic: Behavioral Dentistry (0-0-0-0-1)** Clinical application of behavioral dentistry principles. Data collection, case presentation, fear reduction (iatrosedation), and tobacco cessation.

**HBHV 601 Understanding Stress in Dental Practice (2)** Investigation of the approaches to understanding and managing stress, especially the stress issues in dentistry.

**INTERDISCIPLINARY — BASIC SCIENCES (INTB)**

**INTB 504 Human Craniofacial Development and Genetics (3)** Principles of human embryology and genetics; craniofacial developmental biology; molecular genetics, cytogenetics, clinical orofacial genetics, genetic counseling; bioethics.

**INTB 521 Basic and Medical Microbiology (2)** Fundamentals of microbial structure, growth and physiology; major bacterial, viral and fungal diseases, symptoms, course, control and treatment; emphasis on diseases related to dental management.

**INTB 601 Advances in Oral Biology (2)** Review of basics of scientific methodology; comparison between and indications for scientific studies and case reports; critical review of current dental literature.

**INTB 603 Systematic Approach to Scientific Writing (2)** Study of dental research publication and review of writing principles; focus on logical arrangement of information, avoidance of common writing flaws, attainment of syntactical fluency.

**INTB 604 Clinics in Craniofacial Malformations (2)** Diagnosis, treatment, and rehabilitation of craniofacial malformations; principles of health care of craniofacial malformation patients. Includes hospital clinical observation.

**INTB 650abcdef Dental Research Participation (1-6 each)** Assist in research in basic science, biomedical, or clinical dental areas. Experience in research strategy, design and methods using practical scientific problem solving.

**INTB 651abcd Experience in Dental Teaching (1-6 each)** Practical teaching experience in dental laboratory and clinic settings under faculty supervision. Includes instruction in effective methods.

**INTB 652 Externship (1-6)** Dental experience at an off-site location — not limited to clinical experience. Student participation must be approved by Associate Dean, Academic Affairs.

**INTB 690abcdef Directed Dental Research (1-12 each)** Dental clinical and/or basic science research under faculty guidance; proposal developed, research conducted, conclusion drawn, paper written. Units determined by extent of research. Graded CR/NC.

**INTERDISCIPLINARY —  
DEVELOPMENTAL DENTISTRY (INDD)**

**INDD 501 Applied Growth and Development (1)** Clinical relevance of chronological and biological assessment of maturation related primarily to diagnosis and prognosis.

**INDD 650abcdef Dental Research Participation (1-6 each)** Assist in research in basic science, biomedical, or clinical dental areas. Experience in research strategy, design and methods using practical scientific problem solving.

**INDD 651abcd Experience in Dental Teaching (1-6 each)** Practical teaching experience in dental laboratory and clinic settings under faculty supervision. Includes instruction in effective methods.

**INDD 652 Externship (1-6)** Dental experience at an off-site location — not limited to clinical experience. Student participation must be approved by Associate Dean for Student and Academic Life.

**INDD 690abcdef Directed Dental Research (1-12 each)** Dental clinical and/or basic science research under faculty guidance; proposal developed, research conducted, conclusion drawn, paper written. Units determined by extent of research. Graded CR/NC.

**INTERDISCIPLINARY — PRACTICE  
DYNAMICS (INTP)**

**INTP 501 Behavioral Strategies in Dentistry (2)** Improvement of time and stress management and effectiveness in working with others; establishment of goals in dentistry; effective presentation of ideas. For Advanced Standing Program for International Dentists.

**INTP 502ab Human Relations in Dental Practice (2-2)** Introduction to behavioral concepts related to pain, fear, sedation; interviewing, treatment planning; care of geriatric and handicapped patients; patient education; includes principles of clinical application.

**INTP 503ab Evaluation of Scientific Information in Clinical Practice (0-1)** Practical guidelines for critically appraising scientific information applicable to the clinical practice of dentistry. Seminars will complement lectures with examples.

**INTP 650 Dental Research Participation (1-6)** Assist in research in basic science, biomedical, or clinical dental areas. Experience in research strategy, design and methods using practical scientific problem solving.

**INTP 651 Experience in Dental Teaching (1-6)** Practical teaching experience in dental laboratory and clinic settings under faculty supervision. Includes instruction in effective methods.

**INTP 652 Externship (1-6)** Dental experience at an off-site location — not limited to clinical experience. Student participation must be approved by Associate Dean for Student and Academic Life.

**INTP 690 Directed Dental Research (1-12)** Dental clinical and/or basic science research under faculty guidance; proposal developed, research conducted, conclusion drawn, paper written. Units determined by extent of research. Graded CR/NC.

**INTERDISCIPLINARY — RESTORATIVE  
DENTISTRY (INTR)**

**INTR 503 Preclinical Diagnosis and Treatment Planning (2)** Interdisciplinary course focusing on diagnosis and treatment planning through didactic course work and workshops which will include data collection/assessment, diagnosis and treatment planning methodologies, and specialty considerations.

**INTR 524abcdef Clinical Practice (0-0-0-0-3, FaSpSm)** The clinical component of existing didactic courses in Practice Management and Human Behavior. Graded IP.

**INTR 550ab Introduction to Clinical Dentistry (0-1)** Clinical operator preparation; asepsis and sterilization; preventive dentistry; introduction to physical evaluation, extra- and intra-oral examinations, treatment sequencing, dental specialty areas; includes clinical assisting.

**INTR 551abcde Clinical Diagnosis and Treatment Planning (0-0-0-0-1)** Large and small group seminars focusing on diagnosis and treatment planning involving multiple specialty case presentations; integrated therapy, contingency plans and case presentations will be included.

**INTR 553abcdef Clinic: Diagnosis and Treatment Planning (0-0-0-0-2)** Clinical experience in diagnostic procedures and treatment planning in care of dental patients. Includes student preparation of documentation of patient care and seminar.

**INTR 652 Externship (1-6)** Dental experience at an off-site location — not limited to clinical experience. Student participation must be approved by Associate Dean for Student and Academic Life.

**INTR 690abcdef Directed Dental Research (1-12 each)** Dental clinical and/or basic science research under faculty guidance; proposal developed, research conducted, conclusion drawn, paper written. Units determined by extent of research. Graded CR/NC.

**INTERDISCIPLINARY — SURGICAL  
SCIENCES (INTS)**

**INTS 651abcd Experience in Dental Teaching (1-3, max 6)** Practical teaching experience in dental laboratory and clinic settings under faculty supervision. Includes instruction in effective methods.

**INTS 652 Externship (1-6)** Dental experience at an off-site location — not limited to clinical experience. Student participation must be approved by Associate Dean for Student and Academic Life.

**INTS 690abcdef Directed Dental Research (1-12 each)** Dental clinical and/or basic science research under faculty guidance; proposal developed, research conducted, conclusion drawn, paper written. Units determined by extent of research. Graded CR/NC.

**INTERDISCIPLINARY — DIAGNOSTIC  
SCIENCES (INTX)**

**INTX 501abcdeh Integrated Basic and Applied Science I (1-1-2-2-2-2-1)** Principles of anatomy, histology, physiology, pathology applied to patient evaluation and management. Focuses on cell and connective tissue biology, neuromuscular, blood, endocrine and cardiovascular systems.

**INTX 502abcdef Integrated Basic and Applied Science II (1-1-2-3-1-2)** Principles of anatomy, histology, physiology, pathology applied to patient evaluation and management. Focuses on respiratory, genito-urinary, gastrointestinal, hepato-biliary systems, oral biology, nutrition and hospital dentistry.

**INTX 651abcd Experience in Dental Teaching (1-6 each)** Practical teaching experience in dental laboratory and clinic settings under faculty supervision. Includes instruction in effective methods.

**INTX 690abcdef Directed Dental Research (1-12 each)** Dental clinical and/or basic science research under faculty guidance; proposal developed, research conducted, conclusion drawn, paper written. Units determined by extent of research. Graded CR/NC.

**MICROBIOLOGY AND IMMUNOLOGY (MBIO)**

**MBIO 310 Principles of Microbiology and Immunology (2)** Fundamental concepts of microbiology and immunology. Bacterial, viral and fungal diseases are correlated with host responses; oral manifestations of infectious disease. Emphasis on sanitation and sterilization.

**MBIO 501 Immunology (2)** Fundamentals of immunology; basic immunopathology, especially concerning the oral cavity, including immunogenetics; hypersensitivities and inflammation; auto-immune diseases.

**OCCCLUSION (OCCL)**

**OCCL 310 Fundamentals of Dental Morphology (1)** Fundamentals of tooth form; carving of the permanent teeth.

**OCCL 502 Occlusion (1)** Principles of occlusion as related to clinical application of techniques and procedures to diagnose and treatment plan malfunctions of the stomatognathic system.

**OCCL 521ab Dental Morphology and Function (3-2)** Fundamentals of tooth form; principles of occlusion.

**OCCL 522 Occlusion Laboratory (1)** Laboratory experience in functional analysis and correction of occlusal disharmonies.

**OCCL 601 Advanced Concepts of Occlusion (1)** Historical perspective of occlusion; occlusal equilibration, effect of occlusal adjustment, instrumentation useful in occlusal therapy. Includes clinic and laboratory experience.

**OROFACIAL PAIN ORAL MEDICINE (OFPM)**

**OFPM 701 CPR, Blood and Airborne Infections and Common Emergencies for Dental Residents (1, Sm)** CPR training, review of common dental emergencies, and blood and airborne pathogens in dental patients.

**OFPM 702ab Soft Tissue Disease for Dental Residents (a: 1, Sm; b: 2, Fa)** Seminars on the various mucosal, cutaneous, gingival and salivary diseases and lesions in the oral and maxillofacial region.

**OFPM 703 Local Anesthesia, Minor Surgery and Biopsy Procedures for Dental Residents (1, Sm)** Seminars on local anesthesia methods and minor surgical procedures appropriate for the oral and maxillofacial region.

**OFPM 704 Bony Pathology, Radiology and Advanced Imaging for Dental Residents (1, Sm)** Review of the oral and maxillofacial region osseous and odontogenic pathologies and the various imaging methods used to examine this anatomic region.

**OFPM 705 Neurogenic Based Oral and Facial Pains for Dental Residents (2, Sp)** Seminars on the diagnostic and therapeutic procedures appropriate for chronic neurogenic based pain disorders that occur in the orofacial region.

**OFPM 706 TMD, Orthopedics, Rheumatology and Physical Therapy for Dental Residents (2, Fa)** Seminars on various topics relating to the diagnosis and management of Temporomandibular disorders.

**OFPM 707 Pharmacology Series for Dental Residents (2, Fa)** Seminars on common medications used in the practice of oral medicine and chronic orofacial pain.

**OFPM 708 Physical Evaluation and Laboratory Diagnostics for Dental Residents (2, Sm)** Seminars discussing physical evaluation and laboratory-based diagnostic procedures and methods appropriate for the diagnosis of oral medicine and chronic orofacial pain disordered patients.

**OFPM 709 Headaches for Dental Residents (2, Sm)** Seminars on the diagnosis, prevention and management (including pathophysiologic mechanisms) of episodic and chronic headache disorders.

**OFPM 721 Neurosciences for Dental Residents (2, Fa)** Seminars on the neurophysiologic and neuroanatomic bases of chronic orofacial pain disorders.

**OFPM 722 Internal Medicine and Systemic Disease for Dental Residents (2, Sp)** Seminars on common systemic diseases and the potential interactions with oral disease and treatment.

**OFPM 723 Systems Physiology, Motor Disorders and Sleep Apnea for Dental Residents (2, Fa)** Seminars on various topics relating to oral motor disorders and sleep disordered breathing (as it relates to the mandible and tongue.)

**OFPM 724 Psychological and Psychometric Assessment for Dental Residents (2, Sm)** Seminars on various topics relating to bio-behavioral diagnosis and, where appropriate, psychological management of patients with chronic illness in the orofacial region.

**OFPM 725 Epidemiology, Nutrition and Aging for Dental Residents (2, Sm)** Seminar on the epidemiology of oral disease and nutritional topics as related to the aging patient.

**OFPM 726 Immunology and Immunosuppression for Dental Residents (2, Fa)** Seminar course on immunology and immunosuppression as it relates to diseases in the oral and maxillofacial region.

**OFPM 727 Infectious Disease, Oral Microbiology and Virology for Dental Residents (2, Sm)** Seminar organized around infectious diseases in the oral, pharyngeal and nasal region.

**OFPM 728 Case Presentations by OFP-OM Residents (2, Sp)** Case presentations by Orofacial Pain/Oral Medicine residents in which each resident presents and defends the diagnostic and treatment methods selected for a particular case.

**ORAL MEDICINE ORAL DIAGNOSIS (OMOD)**

**OMOD 501 Emergency Dental Treatment (1)** Dental emergencies in a general dental practice; emphasis on diagnosis of pain, trauma, infections, abscesses, myofacial problems, pulpal considerations, restorative goals; interrelationship of these areas.

**OMOD 502 Chronic Orofacial Pain (2)** Current concepts of pain mechanisms; application to differential diagnosis, treatment, and management of chronic head, neck, and dental pain.

**OMOD 505 Oral Medicine (2)** Detection, recognition, assessment, management and treatment modification of medical conditions presented by dental patients.

**OMOD 506 Infection Control (1)** Infection control and clinical asepsis in the dental office; ethical and legal aspects; specific agents of disease; epidemiology.

**OMOD 551abcd Clinic: Physical Evaluation (0-0-0-1)** Obtaining medical history, performing modified physical exams and clinical laboratory tests, establishing physical status. Understanding rationale and indications for modifying dental therapy; clinic and seminar.

**OMOD 562abcd Clinic: Hospital Dentistry (0-0-0-1)** Clinical experience in dentistry for the medically compromised and physically handicapped patient in a hospital environment.

**OMOD 563abcdef Clinic: Emergency Dental Treatment (0-0-0-0-1)** Experience in management and treatment of emergency dental problems, including diagnosis of the pain cause, provision of appropriate therapy, and post operative instructions to the patient.

#### **OPERATIVE DENTISTRY (OPER)**

**OPER 520 Preclinical Operative Dentistry (ISP) (3)** Preparation for clinical work through study of fundamentals of cavity design and restoration of cavity preparations on extracted teeth mounted in a manikin.

**OPER 521ab Preclinical Operative Dentistry I (1-3)** Introduction to terminology, materials, and instruments used in operative dentistry; fundamentals of amalgam restoration; principles of cavity preparation; amalgam manipulation, condensation, and carving using extracted teeth.

**OPER 522 Preclinical Operative Dentistry II (3)** Fundamentals of cavity design; restoration of cavity preparations on extracted teeth mounted in the manikin.

**OPER 561abcd Clinic: Operative Dentistry I (0-0-0-6)** Clinical experience treating patients using all modalities of operative dentistry.

**OPER 562ab Clinic: Operative Dentistry II (0-6)** Clinical experience treating patients using all modalities of operative dentistry.

**OPER 620 Conservative Cast Gold Restorations (2)** Principles of cavity preparation, fabrication technique and finishing for conservative cast gold restorations; includes lab and clinic.

#### **ORTHODONTICS (ORTH)**

**ORTH 501ab Seminar: Orthodontics (0-1)** Clinical use of cephalometrics and orthodontic prediction; removable orthodontic appliances and their design; case analysis; mixed dentition cases; adult tooth positioning; orthodontic banding; molar uprighting.

**ORTH 521 Preclinical Orthodontics (2)** Evaluation, prevention, and treatment of dento-facial malformations. Construction of basic appliances to treat orthodontic problems encountered by the general practitioner.

**ORTH 561abcdef Clinic: Orthodontic Therapy (0-0-0-0-2)** Diagnosis and limited treatment of orthodontic problems encountered in general practice. Diagnosis of complex orthodontic problems requiring treatment by a specialist. *Prerequisite:* ORTH 521 for *a*; *a* before *b*, etc.

**ORTH 674 Clinical and Molecular Bone Biology (2, Sp)** Explore the impact of the application of new molecular techniques to bone biology research on our understanding of osteoporosis, osteosarcoma, hypercalcemia, etc. Open to advanced program students in dentistry only.

**ORTH 701ab Cephalometrics: Growth and Development (2-4; 2-4)** Principles and mechanics; measurement techniques; developmental morphology; analysis and diagnosis; treatment rationales; gross radiological anatomy and osteology; facial growth. Hours vary.

**ORTH 702 Seminar: Review of the Orthodontic Literature (5)** Two trimester Course Review of current orthodontic literature.

**ORTH 703abcdefhi Seminar: Advanced Orthodontics (2-8 each, FaSpSm)** Advanced diagnosis and treatment of complex orthodontic cases. Asymmetrical treatment. Hours vary.

**ORTH 704abc Seminar: Orthodontics in Theory and Practice (2-2-2)** Review of various approaches to orthodontic treatment; includes presentation of cases.

**ORTH 705abc Orthodontic Practice Management (2-2-2, FaSpSm)** Office management and patient relations in orthodontic practice.

**ORTH 706 Surgical Orthodontics (2)** Diagnosis, treatment, prognosis, and management of orthognathic problems. Lecture and demonstration, 2 hours.

**ORTH 707 Interdisciplinary Aesthetic Treatment (2, Sp)** Commonly encountered interdisciplinary aesthetic problems. Communication and teamwork between orthodontists and general dentists, as well as other specialists will be emphasized.

**ORTH 708 Information Technology in Orthodontic Practice (2, Fa)** Practical applications of information technology in contemporary orthodontics. Topics include office management systems, videocephalometrics, and video imaging in orthodontic practice.

**ORTH 709 Advanced Information Technology in Orthodontic Practice (2, Sm)** Follows ORTH 708 and is designed to provide background and up-to-date information on advanced technologies in orthodontic practice.

**ORTH 721 Biomechanics and Orthodontic Technic (8)** Primary orthodontic techniques and basic diagnostic procedures. Typodont treatment of malocclusion, record taking, retention appliances, and beginning biomechanics.

**ORTH 751abcdefhi Clinic: Advanced Orthodontics (1-10 each, FaSpSm)** Clinical orthodontics; clinical techniques, diagnostic procedures, and applied clinical therapy to selected cases of malocclusion with emphasis on therapy and supervised treatment.

**ORTH 791 Library Research (1-6)** Organized literature searching and compiling of published data for purposes of developing writing and investigative skills.

#### **PATHOLOGY (PTHL)**

**PTHL 312abc Medicine and Pathology (1-3-2, FaSpSm)** An integrated approach to clinical, gross and microscopic study of basic disease processes, systemic pathology, oral pathology, internal medicine, pathophysiology, physical evaluation and emergency medicine for significant organ systems. Clinical-pathologic correlation stressed. Evaluation, classification, and differential diagnosis of oral lesions; disease recognition and dental treatment modification.

**PTHL 501 Oral Pathology (4, Sm)** Clinical radiographic, gross and microscopic characteristics of mucosal, skin, fibroscopic and salivary gland diseases; odontogenic tumors and cysts; benign and malignant neoplasms and iatrogenic conditions.

**PTHL 504ab Seminar: Oral Pathology (0-0)** Clinico-pathologic discussion of oral pathosis cases. A variety of "unknown" cases representing diagnostic problems are analyzed. Etiology, pathogenesis, clinical/ radiographic features, therapy and prognosis are stressed.

**PTHL 601 Advanced Oral Pathology Seminar (2)** Detailed discussion and analysis of many cases representing a wide variety of oral pathologic conditions stressing differential diagnosis and clinical-pathologic correlations.

**PTHL 701 Clinicopathologic Conference (3-12)** Clinicopathologic correlation of diseases of the head and neck. Seminar, 1 hour. Presented at LAC+USC Medical Center.

**PEDIATRIC DENTISTRY (PEDO)**

**PEDO 310 Principles of Dentistry for Children (1)** Role of the dental hygienist in dental care for the child patient. Principles of pediatric dentistry as related to education of the child patient and the parent. Lecture, 1 hour.

**PEDO 501 Clinical Pediatric Dentistry (1)** Scientific principles underlying contemporary pediatric dentistry, including prevention of disease; dental anomalies; habits and other problems in occlusal development; behavior management; child abuse.

**PEDO 521 Preclinical Pediatric Dentistry (2)** Principles and techniques of cavity preparations in primary teeth; pulpal therapy; stainless steel crowns; space maintenance; diagnosis, treatment planning.

**PEDO 551abc Clinic: Dentistry for Children I (0-0-2)** Structured clinical experience in caring for the dental needs of the child patient. Includes special case seminars.

**PEDO 561abc Clinic: Dentistry for Children II (0-0-1)** Dental treatment of the child patient; preventive and restorative dentistry; space maintenance and interceptive orthodontic procedures.

**PEDO 701ab Seminar: Advanced Pediatric Dentistry (8-15 each, FaSpSm)** Discussions of literature related to pediatric dentistry. Biologic considerations in operative dentistry, odontogenesis, dental trauma, physiology of occlusion, pulpal biology. Graded CR/NC.

**PEDO 702ab Comprehensive Review of Pediatric Dentistry (5-7 each, FaSpSm)** Critical analysis of current pediatric dentistry literature and case conferences related to the application of contemporary issues in dentistry for the complex child patient.

**PEDO 703abcde Interceptiv Orthodontics (2-5 each)** Recognition, evaluation, and treatment of developing orthodontic problems appropriate to the pediatric dentist; emphasis on diagnosis; laboratory experience included.

**PEDO 704ab Prevention in Pediatric Dentistry (2-2)** Discussions and readings pertaining to the analysis and incorporation of the many components of prevention into the contemporary pediatric dentistry practice.

**PEDO 705 Pediatric Diseases (2)** Discussion of medical conditions seen by the pediatric dentist in the hospital environment. Conditions include childhood cancer, HIV, heart disease, diabetes mellitus and blood dyscrasias. Graded CR/NC.

**PEDO 706 Dental Care for Pediatric Patients with Disabilities (2)** Medical, dental, psychological, and social problems of children with developmental disabilities; effect of problems on delivery of pediatric dentistry. Graded CR/NC.

**PEDO 707 Seminar: Cleft Palate Rehabilitation (1-9)** Three trimester course discussions and case conferences related to treatment of patients with oral and facial anomalies: includes interceptive and corrective orthodontics, preventive and restorative treatment, and selected oral surgery-prosthetic rehabilitative procedures. Seminar, 3 hours.

**PEDO 708 Practice Management (1, FaSpSm)** Discussion of issues related to the contemporary practice of pediatric dentistry (seminars and office visitations). Topics include: purchasing a practice, associateships, hospital affiliations, practice administration and marketing, computers, jurisprudence and auxiliary utilization.

**PEDO 709 Conscious Sedation in Pediatric Dentistry (1, Sm)** Seminar topics include: review of pharmacology and effectiveness of commonly used oral agents, methods of administration, regulatory guidelines, patient monitoring, management of sedation related emergencies.

**PEDO 721 Pediatric Physical Evaluation (2)** Assessment of patient health status; evaluation and management of acute and chronic disease states which may be observed in the pediatric dental practice.

**PEDO 761abcde Clinic: Advanced Pediatric Dentistry (2-10 each, FaSpSm)** Clinical application of advanced pediatric dentistry techniques in routine and special problem cases in the outpatient environment. Hours vary. Graded CR/NC.

**PEDO 771abcde Clinic: Hospital Pediatric Dentistry (2-15 each, FaSpSm)** Treatment of the child patient in the hospital environment. Emphasis placed on treatment and management with physical, mental, or emotional disabilities.

**PEDO 772abcde Clinic: Interceptiv Orthodontics (1-3 each)** Clinical application and treatment procedures for tooth guidance, preventative and interceptive orthodontics.

**PEDO 773 Hospital Pediatric Clinics (2-4)** Observation and participation in affiliated hospital clinics: anesthesiology, hematology, and genetic clinics; grand pediatric rounds and other conferences.

**PEDO 774 Clinical Genetics in Pediatric Dentistry (9)** Genetic principles of oral, facial and cranial malformations; technique and theory of clinical genetics, differential diagnosis and treatment of disorders of the craniofacial complex.

**PEDO 790ab Directed Research: Pediatric Dentistry (1-6 each)** An examination and analysis of clinical and laboratory problems in dentistry for children leading to completion of an original research project. Graded CR/NC.

**PERIODONTICS (PERI)**

**PERI 310ab Introduction to Periodontal Diseases (1-1, FaSp)** Introduction to periodontal disease; emphasis on identification of normal periodontium, distinguishing of gingival and periodontal diseases; includes data collection and classification of gingival and periodontal diseases.

**PERI 415 Basic Periodontal Therapy (1)** Basic therapeutic modalities of periodontal treatment; general principles and methods of surgical periodontal treatment.

**PERI 502 Periodontal Diseases and Elements of Therapeutic Judgment (2)** Periodontal pathologic processes; pathogenesis, classification and clinical features of gingivitis; periodontitis; other related diseases of periodontium including diagnosis and initial phases of treatment.

**PERI 504 Advanced Periodontics (1)** Periodontics as related to endodontics, orthodontics, and restorative dentistry; bone induction, osseous grafting, splinting, management of furcation lesions; maintenance, recall, and referral.

**PERI 521 Periodontal Surgery (2)** General principles and methods of surgical periodontal treatment; includes laboratory exercises.

**PERI 550ab Clinic: Introductory Periodontal Therapy (1-1)** Laboratory and clinical development of periodontal therapy procedures; basic instrumentation principles.

**PERI 561abcd Clinic: Periodontal Therapy I (0-0-0-1)** Supervised treatment of periodontal disease at all levels of complexity.

**PERI 562ab Clinic: Periodontal Therapy II (0-2)** Supervised treatment of periodontal disease at all levels of complexity.

**PERI 602 Current Controversies in Periodontology (2)** Examination of the major controversies in the field of periodontology; emphasis on the efficacy of current treatment modalities and future trends.

**PERI 603abc Advanced Periodontal Surgery (0-0-2)** Surgical management of more complex osseous and muco-gingival defects.

**PERI 701ab Seminar: Review of Current Periodontal Literature (2-3)** Review and critical evaluation of the current periodontal literature.

**PERI 702ab Seminar: Periodontal Treatment Procedures (2-2)** Presentation of various techniques in current periodontal treatment.

**PERI 703ab Seminar: Periodontal Case Presentation (1-2)** Formalized presentation and discussion of clinical cases treated by advanced students.

**PERI 704abcdefhij Seminar: Periodontal Therapy (2 each)** Presentation and discussion of treatment of clinical cases involving soft tissue and osseous management; rationale for the therapy; surgical wound healing; dental implant surgery.

**PERI 708 Seminar: Clinical Basis of Periodontics (4)** Evaluation of the literature dealing with various types of therapy including the objectives of treatment.

**PERI 710 Clinical Periodontal Photography (1)** Demonstration of techniques used in intraoral photography for periodontal purposes, emphasis on proper clinical case documentation in seminar presentation and Specialty Board Certification.

**PERI 711 Occlusal Therapy in Periodontics (2)** Anatomy of the TMJ mandibular movements; occlusal anatomy and their inter-relationships; methods of occlusal correction using anatomy and mandibular movements as a guide.

**PERI 713abcdefhij Treatment Planning in Periodontics (2 each)** Presentation of clinical findings, diagnoses, and plan of treatment of clinical cases by advanced students.

**PERI 715 Treatment of Special Care Patients (3)** Periodontal care and treatment of older population groups, handicapped patients, and other types of special patients, settings, and situations.

**PERI 716ab Seminar: Special Topics in Periodontal Disease (3-3)** Discussion of topics of immediate importance and controversy. Experts in the field are invited to participate as guest speakers.

**PERI 750 Advanced Periodontal Instrumentation (3)** Advanced root preparation techniques including design and manufacturing characteristics of various instruments, sharpening techniques, and root morphology as it relates to advanced instrumentation principles.

**PERI 752 Interdisciplinary Treatment: An Orthodontic Perspective (2)** Effective recognition, evaluation and understanding of the orthodontic treatment phase required in interdisciplinary treatment plans; includes laboratory and clinical experience; applicable to orthodontics, periodontology, prosthodontics.

**PERI 761abcdefhij Clinic: Advanced Periodontics (1-10 each)** Clinical experience in the treatment of patients with all types and degrees of involvement of periodontal disease. Includes placement of dental implants. Graded CR/NC.

**PERI 771ab Periodontal Therapy in the Hospital (1-1)** Role of the periodontist in hospital therapy. Treatment of complex cases in the hospital environment.

**PERI 790ab Directed Research: Periodontics (1-6 each)** Research in clinical and experimental periodontology. Graded CR/NC.

## PHARMACOLOGY (DPHR)

**DPHR 410 Principles of Pharmacology (2)** Basic principles of drug action; application of drugs in the prevention and treatment of disease; harmful effects of drugs on biological systems. Lecture, 2 hours.

**DPHR 501 Pharmacology (3)** General principles of drug action: prescription writing; toxicology; pharmacology of drugs affecting cardiovascular, autonomic, endocrine, and central nervous systems; drug control of pain, anxiety, infection.

**DPHR 601 Clinical Drug Therapy in Dentistry (2)** Clinical pharmacology of drug therapy important to dental practice using case history disease signs and symptoms and attendant drug therapy.

**DPHR 701 Advanced Pharmacology (1)** Pharmacologic principles and practice of drug use to control anxiety, pain, and infection. Treatment of drug and medical emergencies as they relate to dental specialty practice.

## RESTORATIVE DENTISTRY (REST)

**REST 314 Physiology of Occlusion for Hygienists (1)** Biology and function of the gnathostomatic system. Role of the hygienist in diagnosis and treatment of occlusal dysfunctions.

**REST 501 Preclinical Operative and Fixed Prosthodontics (Conjoint) (2)** Fundamental concepts of restoring an individual tooth with a cast restoration; principles of cavity preparation; casting fabrication and cementation.

**REST 503ab Clinical Restorative Dentistry (1-1)** Application of pre-clinical procedures in operative dentistry, fixed prosthodontics, removable prosthodontics, and dental materials.

**REST 504 Diagnosis and Treatment Planning (1)** Utilizing a restorative approach, enhance students' knowledge and ability to choose treatment best suited for existing dental conditions, patients' requests and their financial ability.

**REST 521 Preclinical Operative/Fixed Prosthodontics Laboratory (3)** Experience in cavity preparation; casting fabrication and cementation on extracted teeth and plastic dentiforms.

**REST 522 Aesthetics in Dentistry (1)** Definition and relationship of elements of aesthetics; application in patient motivation and care.

**REST 553ab Seminar: Review of Literature in Restorative Dentistry (2-2)** Critical evaluation of classical literature in restorative dentistry.

**REST 602ab Participation in Advanced Dental Care (0-3)** Participation in advanced dental treatment in Faculty Private Practice Clinic, techniques of difficult case presentation and efficiency in practice. Clinic and seminar.

**REST 701 Orientation to Advanced Prosthodontics (5)** Preclinical overview of materials, techniques, instrumentation, and treatment procedures necessary for providing advanced prosthodontic care in the clinical environment.

**REST 702abcdefhi Seminar: Treatment Planning (2 each)** Seminars led by students with case presentations of complex multidisciplinary treatment plans, completed therapy and staff conferences.



**REST 703abcdeh Seminar: Review of the Prosthodontic Literature — Fixed (1 each)** Weekly two hour seminars devoted to review of the historic, classic, and current literature in fixed prosthodontics.

**REST 704abcdeh Seminar: Review of the Prosthodontic Literature — Removable (1 each)** Weekly two hour seminars devoted to review of the historic, classic, and current literature in removable prosthodontics.

**REST 705 Advanced Fixed Prosthodontics Techniques (1)** Tooth preparation and advanced laboratory techniques necessary to implement full mouth rehabilitation.

**REST 706 Advanced Complete Denture Techniques (1)** Advanced laboratory and clinical skills for a specialty prosthodontic practice.

**REST 708ab Dental Ceramics, Color, and Aesthetics (2-2)** Theory of color and dental aesthetics; history and development of dental ceramics; design and techniques in fabrication of ceramo-metal restorations.

**REST 709ab Seminar: Removable Partial Dentures (1-2)** Diagnosis, treatment planning, and design of removable partial dentures using extracoronal and intracoronal retainers.

**REST 710abcd Implant Dentistry (1-1-1-1)** Implant modalities and types; basis for selection; techniques of placement and of supervision of prosthodontic restoration. Includes a review of classic implant literature.

**REST 712 Maxillofacial Prosthodontics (2)** Theory and techniques for fabrication of prostheses to correct maxillofacial deformities including cleft palate.

**REST 721ab Principles of Occlusion (2-2)** Application of current occlusal concepts in removable prosthodontics. Techniques of occlusal adjustment and additive waxing for development of occlusal morphology.

**REST 761abcdehij Clinic: Advanced Prosthodontics (1-10 each)** Students treat patients with complex interdisciplinary problems. A minimum of five full mouth reconstructions and 10 sets of complete dentures will be completed.

**REST 781 Clinic: Maxillofacial Prosthetics (1-8)** Clinical experience in fabrication of prostheses to correct maxillofacial deformities.

**REST 782abcde Clinic: Implant Prosthodontics (1-10 each)** Clinical procedures in implants for prosthodontic rehabilitation.

**REST 790 Directed Research: Prosthodontics (1-12)** Opportunities for research in clinical and experimental prosthodontics. Graded CR/NC.

#### **REMOVABLE PROSTHODONTICS (RPRO)**

**RPRO 501 Preclinical Removable Complete Prosthodontics (1)** Fundamental theory for the fabrication of removable complete dentures.

**RPRO 502 Removable Complete Prosthodontics (1)** Complete denture treatment: phases, clinical procedures, philosophy, concept, rationale, and need.

**RPRO 503ab Preclinical Removable Prosthodontics and Implants (2-1)** Introduction to disciplines of removable complete and partial dentures and implants, including classification and progress of edentulism, support sources and principles, design, fabrication and evaluation.

**RPRO 510 Implant Dentistry (1)** Principles and use of implants in dentistry: includes history, biological basis, types, diagnosis and treatment planning, surgical and restorative procedures, and limitations.

**RPRO 511 Preclinical Removable Partial Prosthodontics I (1)** Partial denture diagnosis and treatment planning; basic principles of partial denture design, fabrication, and function.

**RPRO 512 Preclinical Removable Partial Prosthodontics II (1)** Partial denture design, fabrication, and function; repair; patient education.

**RPRO 513 Removable Partial Prosthodontics (1)** Clinical removable partial prosthodontic treatment including diagnosis, treatment planning and clinical techniques.

**RPRO 521 Preclinical Removable Complete Prosthodontics Laboratory (1)** Fundamental theory for the fabrication of removable complete dentures.

**RPRO 523ab Preclinical Removable Prosthodontics and Implants Laboratory (1-1)** Laboratory experience in the fabrication of removable complete and partial dentures and implants.

**RPRO 532 Preclinical Removable Partial Prosthodontics Laboratory II (1)** Laboratory experience in fabrication of removable partial dentures.

**RPRO 550 Removable Complete Prosthodontics Clinic I (1)** Clinical demonstration with supervised clinic experience in construction, repair, and evaluation of the removable complete denture.

**RPRO 561abcd Clinic: Removable Complete Prosthodontics I (0-0-0-2)** Diagnosis, treatment planning, and care of edentulous patients. Complex cases involving temporomandibular joint dysfunction, surgical and congenital defects; seminars on clinical treatment.

**RPRO 562ab Clinic: Removable Complete Prosthodontics II (0-3)** Diagnosis, treatment planning, and care of edentulous patients. Complex cases involving temporomandibular joint dysfunction, surgical and congenital defects; seminars on clinical treatment.

**RPRO 571abcdef Clinic: Removable Partial Prosthodontics (0-0-0-0-2)** Clinical experience in diagnosis, treatment planning, and laboratory procedures necessary for the treatment of the partially edentulous patient. Includes seminars related to clinical treatment.

**RPRO 602 Advanced Removable Prosthodontics (4)** Critical review and evaluation of the removable prosthodontic literature; guided experience in the laboratory and clinical phases of removable prosthodontic therapy. (Duplicates credit in 604abc.)

**RPRO 603 The Edentulous Patient — Conventional or Implant Prosthesis (1)** Effective management of the edentulous patient who is unable to adapt to a prosthesis; includes a review of implant dentistry with a hands-on session.

**RPRO 604abc Advanced Removable Prosthodontics (0-0-4)** Critical review and evaluation of the removable prosthodontic literature; guided experience in the laboratory and clinical phases of removable prosthodontic therapy. (Duplicates credit in 602.)

**RPRO 605 Prosthodontic Seminar: Removable Partial Prosthodontics (1)** Provides fourth year dental students with an advanced didactic foundation for treating the partially edentulous patient with a removable partial.

**RPRO 655abc Dental Implants (0-0-4)** Overview of surgical and prosthodontic implant treatment concepts and modalities; laboratory and clinic experience in fabrication and placement of implant retained prostheses.

**ORAL SURGERY (SURG)**

**SURG 501 Oral Surgery (2)** Introduction to surgical dentistry, armamentarium and procedures; exodontics; infection; post operative care; repair of bone and soft tissue; acute injury; cysts, sinuses, nerve injury, biopsy.

**SURG 562abc Clinic: Oral Surgery I (0-0-1)** Supervised clinical experience in health history, surgical evaluation, extraction of teeth, and minor oral surgery procedures. Includes special case seminars.

**SURG 563abc Clinic: Oral Surgery II (0-0-1)** Supervised clinical experience in health history, surgical evaluation, extraction of teeth, and minor oral surgery procedures. Includes special case seminars.

**SURG 564abcd Clinic: Hospital Oral Surgery (0-0-0-1)** Observation of inpatient and outpatient oral and maxillofacial surgery, participation in clinic care of patients with dento-alveolar pathology, introduction to management of medically compromised patient.

**SURG 611abc Oral and Maxillofacial Surgery (0-0-4)** More advanced instruction in oral and maxillofacial surgery and related diseases as appropriate to the practice of general dentistry; extensive clinical experience.

**SURG 701ab Seminar: Advanced Oral Surgery (2-2)** Problems in advanced oral surgery and hospital oral surgery including student presentations and critique of clinical cases.

**SURG 702ab Seminar: Review of the Oral Surgery Literature (2-2)** Critical analysis of recent oral surgery and other related literature.

**SURG 708ab Orthognathic Surgery (a: 2, Fa; b: 2, Sp)** Surgical planning and treatment of patients with skeletal deformities.

**SURG 721 Surgical Anatomy (2)** Intensive review of anatomy relevant to the practice of oral surgery. Includes dissections and animal surgery.

**SURG 761abcd Clinic: Advanced Oral Surgery (1-10 each)** Clinical evaluation and surgical treatment of dento-alveolar disease in out-patient clinic.

**SURG 763abcd Clinic: Advanced Hospital Oral Surgery and Anesthesia (1-10 each)** Surgical treatment of patients and service in medical anesthesia at the LAC+USC Medical Center.