DOCTOR OF DENTAL SURGERY

Program Overview

Curriculum

Biomedical, preclinical, and clinical science subjects are integrated and combined with applied behavioral sciences in a program to prepare graduates to provide excellent quality dental care to the public and to enter a changing world that will require them to be critical thinkers and lifelong learners. The 36-month curriculum leading to the degree of Doctor of Dental Surgery begins in July and is divided into twelve quarters, each consisting of ten weeks of instruction, one week of examinations, and a vacation period between one and four weeks.

Integrated biomedical science instruction in anatomy, oral histology, biochemistry, physiology, pharmacology, microbiology, immunology, virology, mycology, and nutrition is offered over 10 quarters in increasing detail, followed by multidisciplinary presentations of basic science foundations for clinical topics such as the importance of saliva, tissue aging, nutrition, and infection control. Beginning in the second quarter and continuing throughout the curriculum, students learn to apply basic science knowledge to clinical problems. Integrated preclinical instruction in operative and fixed dentistry and dental anatomy is concentrated in the first four quarters with students learning to work from a seated position in a modern preclinical simulation laboratory. Preclinical instruction in removable prosthodontics, occlusion, and implants is offered in quarters 5-7. Clinical work with patients is initiated in the fifth quarter.

The school is a pioneer in competency-based education, an approach that replaces the traditional system of clinical requirements with experiences that ensure graduates possess the knowledge, skills, and values needed to begin the independent practice of general dentistry. Pacific is also known for its humanistic approach to dental education, stressing the dignity of each individual and their value as a person.

The Clinical Practice Strand supports comprehensive patient care which is based on the concept of private dental practice where the student assumes responsibility for assigned patients' overall treatment, consultation, and referral for specialty care. Second-year students practice clinical dentistry approximately 15 hours per week, and third-year students practice approximately 33 hours per week. Students learn to provide comprehensive dental care under the direction of a team of clinical faculty led by the Group Practice Leader (GPL). The GPL is responsible for mentoring students and ensuring they are receiving adequate clinical experiences to demonstrate competency upon graduation. In the second year, students treat patients in a discipline-based model where they are supervised by trained and calibrated faculty in specific clinical disciplines, including oral diagnosis and treatment planning, periodontics, endodontics, restorative dentistry, and removable prosthodontics. In the third year, students treat patients in a generalist model, where under faculty supervision they provide all care for their patients.

The second and third-year class is divided alphabetically into six group practices. There are approximately 24 second-year and 24 third-year students in each group practice. The GPL manages the group and assumes overall responsibility for the care of patients by students and faculty. Specialists in endodontics manage complex cases in a specified area of the clinic, including test cases. Periodontists manage most periodontal procedures.

There are four exceptions to the comprehensive care model: oral and maxillofacial surgery, pediatric dentistry, oral medicine/facial pain, and radiology. Students are assigned to rotations for one to three weeks in each of these disciplines, except for the oral medicine/facial pain rotations which are one day each. In orthodontics, students participate with faculty and orthodontic residents in adjunctive orthodontic care and in oral development clinics. Third-year students also rotate through the Special Care Clinic where they treat patients with intellectual and developmental disabilities. In addition, each student provides care in the hospital operating room for patients with specific health issues.

Advanced clinical dentistry and evaluation of new developments and topics that involve several disciplines are learned in the third year in conjunction with patient care. Third-year students participate in patient care at multiple extramural sites located in treatment facilities around the Bay Area, including acute care hospitals and community clinics. At extramural clinic sites, students are taught by Pacific faculty in conditions that more closely resemble private practice and typically treat 4-6 patients per day. Rotations occur at a number of different times, including weekdays during the academic year. Students find these experiences valuable, teaching them how to provide excellent patient care in a condensed time frame. Students may elect to participate in externships to specialty programs during academic break periods.

Behavioral science aspects of ethics, professionalism, communication, human resource and practice management, and dental jurisprudence are integrated across the curriculum. Epidemiology and demography of the older population, basic processes of aging, and dental management of hospitalized patients, geriatric patients, and those with the most common disabling conditions are studied during the third year.

Students are counseled individually with regard to establishing a practice and applying for postgraduate education. A weekend conference in the senior year acquaints students with opportunities for postgraduate education and with alumni views of the realities of dental practice.

Units of Credit

One unit of credit is awarded for ten hours of lecture or seminar, twenty hours of laboratory or clinic, or thirty hours of independent study per term. In the predoctoral programs (DDS and IDS), students are assigned to comprehensive care clinics for approximately 650 hours during the second year and 1,000 hours during the third, in addition to specialty clinic rotations. Units of credit are assigned in the comprehensive care clinical disciplines in proportion to the amount of time an average student spends providing specific types of care for assigned patterns.

Courses are taught on a permanent or interim (continuing) basis. Course numbers followed by the letter 'I' indicate interim courses which are taught over two or more quarters. Units assigned to interim courses build upon each preceding quarter's unit value and culminate in a final and permanent unit value. The final unit value is transcripted with the permanent course while interim courses and corresponding unit values can be found on report cards.

Full-time enrollment in the predoctoral programs at the School of Dentistry (DDS and IDS) is defined as 16 or more units per term. Full-time enrollment in the graduate residency programs in orthodontics and endodontics and in the dental fellowship and internship programs is defined as 20 or more units per term.

Personalized Instructional Program

Successful completion of a Personalized Instructional Program is required for graduation. This is reflected on the transcript as a stand-alone two-unit course (DS 394) with a CR grade for completion. Completion dates, beginning with the classes of 2025, will be the end of

the tenth quarter of instruction for DDS and the end of the sixth quarter of instruction for IDS.

Competency Statements

In the 1990s under the leadership of Dr. David W. Chambers, the school led the nation in the adoption of a competency-based education model for pre-doctoral dental programs. In contrast to the prevailing system of 'clinical requirements,' an approach that merely counted a pre-set number of procedures completed in each clinical discipline, competency (p. 3) implies an ongoing and broad-based measure of the developing knowledge, skills, abilities, and values essential to the beginning practice of general dentistry (p. 3). In a competency-based model, multiple faculty observers repeatedly evaluate independent student performance in a natural setting over time.

These competency statements were developed in 2016-17 by a representative group of faculty, students, and alumni to reflect the 'head-heart-hands' philosophy the school embraces: the integration of current and emerging biomedical and clinical knowledge (head); professionalism, ethical behavior, empathy, and communication skills (heart); and clinical skills (hands). For clarity and consistency in application and measurement, an appended glossary defines key terms highlighted in the statements.

1. Integrate biomedical (p. 2) and clinical knowledge to improve oral and systemic health.
2. Think critically (p. 3); use the scientific method (p. 3) to evaluate established and emerging biomedical and clinical science evidence (p. 3) to guide practice decisions.
3. Recognize manifestations of systemic disease and evaluate the impact on oral health (p. 3), oral health care, and well-being.
4. Recognize and evaluate the impact of comprehensive oral health care on systemic health and well-being.
5. Apply the principles of health promotion and disease prevention (p. 3) to individuals and communities.
6. Apply the principles of bioethics (p. 2) to practice.
7. Apply the principles of behavioral science (p. 2) to practice.
8. Establish and maintain trust and rapport with all stakeholders (p. 4) in patient care. Demonstrate empathy (p. 3).
9. Manage the oral health care needs of pediatric, adolescent, and adult patients, including geriatric patients and patients with complex needs (p. 3).
10. Perform comprehensive diagnostic evaluations and risk assessment on patients at all stages of life (p. 4).
11. Obtain, select, and interpret images and tests necessary for accurate differential diagnoses and correlate them with clinical findings.
12. Formulate and present comprehensive, sequenced treatment plans and prognoses in accordance with patient needs, values, and expectations.
13. Obtain and document informed consent or refusal.
14. Follow standard infection control guidelines.
15. Preserve and restore hard and soft tissue to support health, function, and esthetics:

- Screening and risk assessment for head and neck cancer;
- Local anesthesia and pain and anxiety control;
- Appropriate utilization of therapeutic and pharmacological agents used in patient care;
- Management of orofacial pain;
- Communicate with dental laboratory technicians and manage laboratory procedures to support patient care;
- Risk assessment, prevention, and management of caries, including minimally invasive dentistry;
- Restore and replace teeth, including operative, fixed, removable, and dental implant therapy;
- Periodontal therapy and recall strategies;
- Dental emergencies;
- Pulpal therapy and endodontics;
- Oral mucosal and osseous disorders;
- Bony and soft tissue surgery;
- Malocclusion and space management; and
- Evaluate treatment outcomes, prognosis, and continuing care strategies.

16. Recognize and manage medical emergencies in the dental setting.
17. Interact effectively with stakeholders from diverse cultures, backgrounds, and identities (p. 3).
18. Practice, delegate, or refer within the scope of practice (p. 4) and in alignment with patient needs, values, and expectations.
19. Apply current principles of business, financial, and human resource management to lead the oral health care team (p. 3).
20. Evaluate contemporary and emerging models of oral healthcare delivery, understand dentistry's role in the larger health care system, and strive to reduce barriers to care.
21. Collaborate with the interprofessional (p. 3) health care team to improve oral-systemic health, enhance the patient experience (p. 3), and reduce risk.
22. Evaluate and implement current and emerging technology to diagnose, prevent, and treat disease.
23. Engage in ongoing quality assurance (p. 3) to improve patient outcomes.
24. Behave professionally (p. 3): manage personal behavior and performance in accordance with standards of the school and the profession.
25. Practice in accordance with current local, state, and federal laws and regulations.
26. Demonstrate ongoing reflection (p. 3), self-assessment (p. 4), continuous learning, and professional development.
27. Demonstrate healthy coping and self-care (p. 4) strategies.
28. Participate in professional activities to promote the profession and serve individuals and communities.

Competency Statements: Glossary of Terms

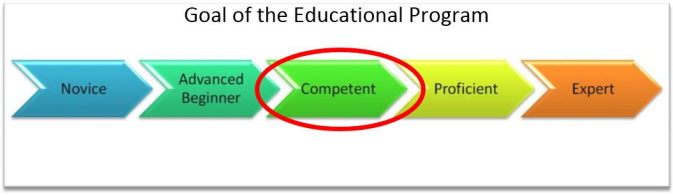
The purpose of this glossary is: (a) to define critical terms in the competency statements so that faculty can design, deliver, and assess targeted, sequenced learning experiences; and (b) to make transparent to students and faculty the goals of the educational program. The glossary is a critical component of the Competency Statement document.

Behavioral science: a branch of science that studies human action and investigates decision-making processes and communication strategies that occur within and between organisms in a social system. Familiarity with major concepts of the discipline may provide solutions to an array of individual, family, and community challenges.

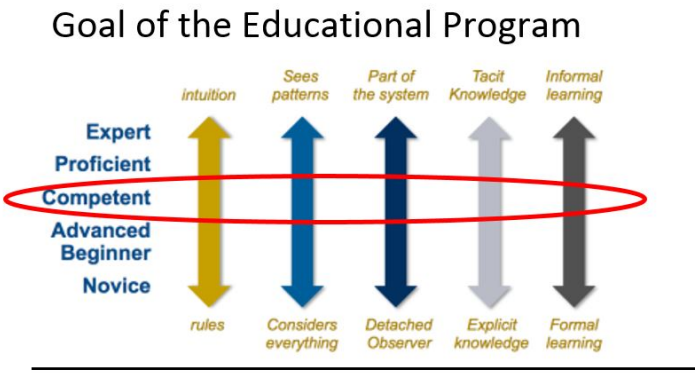
Bioethics: the shared discipline of reflective examination of ethical issues and implications in health care, health science, and health policy.

Biomedical science: the scientific knowledge base of human biology required for the treatment and prevention of oral and systemic disease. This includes knowledge of anatomy, biochemistry, molecular and cell biology, epidemiology, embryology, genetics, histology, immunology, microbiology, nutrition, pathology, pharmacology, physiology, and related knowledge domains.

Competence (competency): knowledge, skills, abilities, and values essential to the beginning practice of oral health care that are performed consistently and independently in natural settings. Competence is observable over time and therefore can be measured and assessed to ensure acquisition.



from: Patricia Benner, Novice to Expert Continuum



from: Patricia Benner, Novice to Expert Diagram

Complex needs: patients with moderate to severe medical, developmental, and/or psychosocial conditions that require of the practitioner additional information or knowledge to manage the patient's health.

Critical thinking: the ability to interpret, evaluate, and draw sound conclusions in sometimes complex situations where all information may not be present or apparent. In professional practice, critical thinking is the application of rational analysis to patient assessment, diagnosis, and treatment planning. The practitioner must be able to identify pertinent information, make decisions based on deliberate review of options, evaluate outcomes of diagnostic and therapeutic tests or decisions, and assess his or her own competence and ability.

Empathy: to understand the thinking, perspectives, and feelings of others. To be done correctly, empathy requires interest in others and a set of skills.

Evidence-based dentistry (EBD): an approach to oral health care that requires the judicious integration of clinically relevant scientific evidence relating to the patient's oral and medical condition and history, the dentist's clinical expertise, and the patient's treatment needs and preferences. (American Dental Association).

General dentistry: (a) the evaluation, diagnosis, prevention, and surgical and non-surgical treatment of diseases, disorders and conditions of the oral cavity, maxillofacial area, and the adjacent and associated structures, and their impact on the human body; (b) a service provided by a dentist within the scope of his/her education, training, and experience; and that is (c) in accordance with the ethics of the profession and applicable law. A general dentist is an integral part of the healthcare system and is the primary oral health care provider for patients of all ages. (adapted from ADA House of Delegates, 1997).

Identity: the belief that a subject, person, or thing is the same as it is represented or claimed to be. Identity can encompass race, gender, sexual orientation, gender identity, age, ability, and other personal characteristics.

Interprofessional education: When students from two or more health professions learn about, from, and with each other to enable effective patient care collaboration and improve health outcomes. Interprofessional collaborative practice exists when providers from different health backgrounds work together with patients, families, caregivers, and communities to deliver quality care (adapted from the World Health Organization, 2010).

Oral health: a functional, structural, aesthetic, physiologic, and psychosocial state of well-being that is essential to an individual's general health and quality of life (ADA House of Delegates, 2014).

Oral health care team: generally composed of the dentist, specialist dentist, dental therapist or dental health aide therapist, dental hygienist (with or without expanded function), dental assistant (with or without expanded function), office support staff, and the dental laboratory technician. Physicians, nurses, nurse practitioners, physician assistants, and other medical professionals are increasingly a critical component of the team.

Patient experience: all elements of the care experience that contribute to patient satisfaction: scheduling, reception, treatment and care, sensitive and empathetic interactions with staff and providers, billing, and follow up.

Prevention: procedures, processes, or strategies that reduce risk, promote disease prevention, and result in improved patient health.

Professionalism (see also 2017 ADEA Statement on Professionalism in Dental Education (http://www.jdentaled.org/content/81/7/885.full.pdf +html/)): the habitual and judicious use of communication skills, knowledge, technical skills, clinical reasoning, empathy, values, and reflection in daily practice for the benefit of the individual or community being served. (Epstein RM, Hundert EM. Defining and assessing professional competence. JAMA 2002: 287: 226–235). Professionalism is the foundation of the doctor-patient relationship. It requires integrity and a high level of skill. The professional assumes an obligation to sharpen and develop skills and judgment throughout a career.

Quality assurance: systematic and ongoing assessment and evaluation of the quality and appropriateness of a service, product, process, structure, or outcome. The process involves identifying strengths and weaknesses, designing and implementing solutions or strategies to improve performance, and careful monitoring to determine the effectiveness of a change or intervention.

Reflection: the active process of reviewing, analyzing, and evaluating experiences, drawing upon theoretical concepts or previous learning, to inform future action (Reid, 1993).

Scientific method: the foundation of the natural sciences that comprises some or all of the following: (a) systematic observation, measurement, and experimentation; (b) induction and the formulation of hypotheses; (c) the making of deductions from the hypotheses; (d) the experimental

testing of the deductions; and (e) the modification of the hypotheses, if necessary.

Scope of practice: procedures, treatments, and actions that a practitioner is allowed to undertake as prescribed by professional licensure and that are within the practitioner's competence.

Self-Assessment: the evaluation of one's performance against current, defined, evidence-based standards and, ultimately, without external input.

Self-Care: activities and practices that are engaged in regularly that aim to reduce stress and to maintain and enhance health and well-being. Prioritizing emotional, physical, intellectual, occupational and environmental wellness is necessary to honor professional and personal commitments. Healthy self-care includes a realization of when to reach out for help or support.

Stages of life: pediatric (≤ 14 years), adult (15-65 years), and geriatric (≥66 years), including the frail elderly and patients with complex needs, older adults (65-84), and oldest old (>85).

Stakeholder: any person or party in the healthcare setting with an interest in the financing, implementation, or outcome of a service, practice, process, or decision made by another. Stakeholders include patients, care givers, family members, faculty and other practitioners, specialists, the dental school, and others consulting on or providing care.

Doctor of Dental Surgery

BMS 120	Genetics	1
BMS 123	Anatomy and Histology	8
BMS 124	Applied Biochemistry	2
BMS 130	Applied Physiology	4
BMS 133	Applied Orofacial Anatomy	7
BMS 143	Applied Oral Biology	1
BMS 220	Pharmacology	5
BMS 232	Immunology & Microbiology	3
BMS 233	Virology & Mycology	1
BMS 234	Application of Integrated Biomedical Sciences	5
COH 110	Pathways for Clinical Success	2
COH 216	Patient Management and Productivity I	3 or 4
COH 217	Clinical Oral Diagnosis and Treatment Planning	3 or 4
COH 218	Clinical Management and Judgment I	3 or 4
COH 316	Patient Management and Productivity II	4
COH 317	Patient Management and Productivity III	4
COH 318	Clinical Management and Judgment II	4
COH 319	Clinical Management and Judgment III	4
COH 368	Emergency Dental Care	3
DS 101	Integrated Clinical Sciences I: Orientation to the Clinical Practice of General Dentistry	13
DS 106	Integrated Clinical Sciences I: Orientation to Clinical Practice Lab	4.5
DS 160	Dental Radiology	1 or 2
DS 166	Dental Radiographic Technique	1 or 2
DS 200	Practice Management I	1
DS 201	Integrated Clinical Sciences II: Application of Foundational Knowledge	6
DS 202	Integrated Clinical Sciences II: Application of Foundational Knowledge	4
DS 213	Integrated Clinical Sciences II: Applied Clinical Sciences	3
DS 266	Clinical Dental Radiology	2
DS 300	Practice Management II	3
DS 301	Jurisprudence	1
DS 302	Clinical Care of Complex Needs	4
DS 303	Integrated Clinical Sciences III: Multidisciplinary Case Based Seminars	6
DS 307	Extramural Patient Care	4
DS 394	Personalized Instructional Program	2
EN 249	Preclinical Endodontics	2
EN 253	Basic Endodontics	1
EN 254	Endodontics	1
EN 259	Clinical Endodontics I	2
EN 359	Clinical Endodontics II	8
OR 244	Orthodontics	2
OR 249	Preclinical Orthodontics	1
OR 348	Applied Orthodontics	1
OS 134	Basic Oral and Maxillofacial Surgery	1
OS 135	Oral and Maxillofacial Surgery Pre-clinical Block	1
OS 230	General Pathology	5
OS 231	Oral Pathology	3
OS 232	Differential Diagnosis of Oral and Maxillofacial Lesions	2
OS 239	Clinical Oral and Maxillofacial Surgery I	1
OS 339	Clinical Oral and Maxillofacial Surgery II	2
PD 146	Preclinical Pediatric Dentistry	0.5 or 1
PD 240	Pediatric Dentistry	3
PD 346	Dental Auxiliary Utilization	1 or 2
PD 347	Clinical Pediatric Dentistry	1 or 4
PR 150	Periodontal Diseases	1
PR 156	Preclinical Periodontics	1
PR 250	Periodontics	3
PR 256	Clinical Periodontics I	5 or 6
PR 356	Clinical Periodontics II	4
PRD 130	IPS I Concepts: Dental Anatomy	2
PRD 131	IPS I: Operative Dentistry Concepts	6
PRD 132	IPS I: Fixed Prosthodontics Concepts	6

PRD 137	Local Anesthesia	1 or 2
PRD 145	IPS I Technique: Dental Anatomy	3
PRD 146	IPS I: Operative Dentistry Technique	9
PRD 147	IPS I: Fixed Prosthodontics Technique	10
PRD 148	Clinical Translation of Preclinical Concepts I	1
PRD 149	Clinical Translation of Preclinical Concepts II	1
PRD 151	Integrated Preclinical Concepts I: Capstone	2
PRD 155	Integrated Preclinical Technique I: Capstone	3
PRD 172	Fundamentals and Application of Local Anesthesia	2
PRD 230	Integrated Preclinical Concepts II: Removable Prosthodontics	2
PRD 231	Integrated Preclinical Sciences II Concepts: Occlusion	1 or 2
PRD 232	Integrated Preclinical Concepts II: Implant Dentistry	1
PRD 235	Integrated Preclinical Technique II: Removable Prosthodontics	5
PRD 236	Integrated Preclinical Sciences II Technique: Occlusion	1.5
PRD 237	Integrated Preclinical Technique II: Implant Dentistry	1
PRD 240	IPS II: Advanced Preventive and Restorative Dentistry Concepts	2
PRD 246	IPS II: Advanced Preventive and Restorative Dentistry Technique	3
PRD 277	Local Anesthesia	1
PRD 279	Clinical Restorative Dentistry I	4 or 6
PRD 281	Dental Implants	1
PRD 379	Clinical Restorative Dentistry II	23
PRD 391	Preparation for State Licensure Lecture	1.5
PRD 395	Preparation for State Licensure Lab	3
PRD 396	Clinical Removable Prosthodontics	8