

Operative Dentistry

Head

- Erica C. Teixeira

Professional certificate: operative dentistry

Faculty: <https://dentistry.uiowa.edu/directory>

Website: <https://dentistry.uiowa.edu/departments/operative-dentistry>

The Department of Operative Dentistry teaches the foundational concepts of dentistry to predoctoral dental students in caries management (diagnosis, prevention, repair, and restorative techniques) and dental materials. The primary departmental focus is to provide the knowledge, technical skills, critical thinking, and judgment for the diagnosis, prevention, and management of dental caries, non-caries dental defects (attrition, abrasion, erosion, abfraction, developmental abnormalities, discoloration, and trauma), and elective aesthetic smile enhancements. It also serves an equally important position to provide national leadership in dental research and advanced restorative technology in its collective faculty efforts and through the professional Certificate in Operative Dentistry.

DDS Student Training

Coursework and clinical experiences in operative dentistry are fundamental to the overall education of Doctor of Dental Surgery students. Operative dentistry coursework covers roughly one-quarter of curriculum time during the first three years of dental school as students progress toward competency in operative dentistry. The department's primary goal is to educate dental students, using the best evidence available and the latest proven technological approaches, to achieve and maintain optimal patient oral comfort, function, and aesthetics through risk-based diagnosis, prevention, and minimally invasive treatment of caries and noncarious lesions of the teeth.

Programs

Professional Program of Study

- Certificate in Operative Dentistry

Courses

Operative Dentistry Courses

OPER:5126 Operative Dentistry Seminar 0-1 s.h.
Review and critical analysis of operative dentistry literature.

OPER:5127 Introduction to Operative Dentistry Advanced Education arr.
Broad introduction to key operative dentistry concepts in preparation for clinical patient care and teaching; overriding objectives are to reinforce fundamental principles of operative dentistry, refine clinical skills, enhance/add approaches of clinical problem solving, establish concepts of acceptable clinical performance levels, and preparation for resident instructors in predoctoral simulation clinic courses.

OPER:5140 Operative Dentistry Advanced Clinic 0-3 s.h.
Medical and surgical clinical management of dental disease; special emphasis on minimally invasive dentistry using advanced aesthetic principles.

OPER:5234 Selected Applications of Operative Dentistry 0-3 s.h.
Advanced techniques completed on simulated patients.

OPER:5240 Advanced Operative Dental Implants and Digital Dentistry 0-1 s.h.
Treatment of partially edentulous area with implant therapy for single tooth replacement; builds on operative dentistry knowledge base with emphasis on fundamental biomechanical principles, materials, and techniques required to rehabilitate form and function of a single tooth implant; demonstration of successful implant treatment predicated upon a sound diagnosis, appropriate treatment plan, precise prosthetically driven placement of implant, logical sequence of treatment, appropriate abutment selection, appropriate materials selection, routine prosthodontic maintenance, and patient education.

OPER:5245 Pre-Clinical Teaching 0-3 s.h.
Teaching predoctoral dental students on simulated patients.

OPER:6225 Graduate Restorative Materials 0,2 s.h.
Dental materials science; mechanical, physical, and chemical properties of restorative materials; selection and manipulation. Same as PROS:6224.

OPER:6226 Applied Dental Restorative Materials 1 s.h.
Addresses materials properties, characterization, and testing; review important concepts that influence materials' properties and degradation behavior and the latest laboratory techniques for materials characterization, including mechanical assays, chemical and surface analysis of materials, and thermal analysis; discuss the importance of regulatory agencies such as the International Organization for Standardization (ISO) and the American Dental Association (ADA). Prerequisites: OPER:6225.

OPER:6246 Clinical Teaching 0-2 s.h.
Clinical teaching instruction in operative dentistry clinics.

OPER:8120 Dental Anatomy 3 s.h.
Basic dental terminology and nomenclature, human tooth morphology, creation of tooth crowns with wax.

OPER:8122 Introduction to Operative Dentistry 1 s.h.
Introduction to basic didactic knowledge and psychomotor skills in the practice of operative dentistry in a preclinical setting with simulated scenarios; for first-year dental students.

OPER:8124 Operative Dentistry I 5 s.h.
Basic didactic knowledge and psychomotor skills of principles, terminology, instruments, materials, and techniques utilized in the practice of operative dentistry in a preclinical setting with simulated scenarios; for first-year dental students. Prerequisites: OPER:8120.

OPER:8240 Operative Dentistry II 3 s.h.
Principles of cavity preparation and digital workflow for designing and fabrication of partial cuspal coverage restorations using CAD/CAM; dental material properties and applications; principles of esthetic restorations and peer exercises on basic clinical concepts. Prerequisites: OPER:8120 and OPER:8122 and OPER:8124.

OPER:8243 Introduction to Clinical Operative Dentistry **3 s.h.**

Students provide clinical care from diagnosis and treatment planning to caries and non-carious lesion management in patients; clinical experience in restoring teeth with small to moderate lesions or defects; demonstration of effective patient management skills including pain control, professionalism, and critical thinking; esthetic dentistry including tooth bleaching. Prerequisites: OPER:8120 and OPER:8122 and OPER:8124 and OPER:8240.

OPER:8370 Operative Dentistry III **arr.**

Combination of didactic and clinical aspects of operative dentistry; medical and surgical management of dental disease; emphasis on minimally invasive dentistry with advanced aesthetic principles. Prerequisites: OPER:8120 and OPER:8122 and OPER:8124 and OPER:8240 and OPER:8243.