

DENTISTRY (MSD)

Master of Science in Dentistry (MSD)

Unit: School of Dentistry (<https://louisville.edu/dentistry/>)

Program Website (<https://louisville.edu/dentistry/residency/>)

Academic Plan Code(s): ENDOMSDCEN, ORTHMSDCOR, PEDDMSDCPD, PERIMSDCPE, PROSMSDCPO

Program Information

The School of Dentistry offers a program of study leading to the Master of Science Degree in Dentistry for postgraduate students/residents enrolled in Advanced Specialty Certificate Programs in Endodontics, Orthodontics, Pediatric Dentistry, Periodontics, and Prosthodontics.

The courses for the Master of Science in Dentistry will total 31 credit hours. The curriculum is at least 19 credit hours (11 core and 8 selective courses), plus credit for research and thesis/publication (minimum twelve (12) credit hours). In addition, depending on the specific accreditation requirements of the specialty, either two or three years of clinical training are required.

The credit hours needed to complete the MSD and the certificate are listed below.

| M.S.D./Specialty Programs | Credit Hours | Time to Completion |
|---------------------------|--------------|--------------------|
| Endodontics | 69 | 2 years |
| Orthodontics | 72 | 2 years |
| Pediatric Dentistry | 70 | 2 years |
| Periodontics | 103.5 | 3 years |
| Prosthodontics | 94 | 3 years |

The School of Dentistry post-professional Master of Science in Dentistry with Specialty Certificate programs offer didactic and clinical training leading to certification in the specific dental specialty area. Completion of an accredited certificate program allows the student to be recognized by state boards of dentistry and by the respective specialty boards as eligible for specialty board examination and specialty dental licensure.

These programs help to develop skillful clinicians and researchers for careers in academic dentistry or private practice in the specialty areas of Endodontics, Orthodontics, Pediatric Dentistry, Periodontics and Prosthodontics. Excellent training in clinical dentistry, teaching skills, and the process and interpretation of biomedical research is essential to equip tomorrow's specialists with the proper scientific background to deal with the changes and challenges inherent in a profession undergoing rapid scientific advancement. These postgraduate students are exposed to a wide variety of clinical techniques by a group of highly qualified faculty with diverse training and varied backgrounds. The philosophy of the programs is that clinical excellence is based on technical proficiency, expert diagnostic skills and broad-based knowledge of the specific specialty literature.

The didactic portion of the curriculum explores the concepts, designs, regulation, interpretation, and presentation of modern biomedical research upon which the practice of modern Endodontics, Orthodontics, Pediatric Dentistry, Periodontics, or Prosthodontics is based.

The Master of Science in Dentistry trains students in research concepts allowing them to design and complete a clinical or basic science research project. As a part of this program, the student is guided to design a

research project and write a research proposal including any informed consent and data collection forms. The student will then conduct the research project to completion. Federal regulations and University of Louisville policy require that all research involving human subjects or analysis of data gathered from human subjects, regardless of funding status, be reviewed and approved by the IRB prior to the implementation of any research activity. After completion of the research project, the student will present the research project in both oral and written form. The oral presentation (defense) includes a review of the literature relevant to the research project, analysis of all data using appropriate statistical tests, and comparison of the results of the project to similar research in the dental literature. The student will also write a thesis or a paper that is suitable for submission and publication in an appropriate peer-reviewed journal.

Students who are enrolled in Endodontics, Orthodontics, Pediatric Dentistry, Periodontics, or Prosthodontics will complete the requirements for the Master of Science in Dentistry in conjunction with the awarding of the specialty certificate.

Program Descriptions

MSD/Endodontics

Endodontics is the branch of dentistry which is concerned with the morphology, physiology, and pathology of the human dental pulp and tissues around the tooth root. Its study and practice encompass the basic and clinical sciences, including biology of the normal pulp, the etiology, diagnosis, prevention and treatment of diseases and injuries of the pulp and associated conditions occurring around the tooth root.

MSD/Orthodontics

Orthodontics is the dental specialty that includes the diagnosis, prevention, interception, and correction of malocclusion of the teeth, as well as neuromuscular and skeletal abnormalities of the developing or mature orofacial structures.

MSD/Pediatric Dentistry

Pediatric Dentistry is an age-defined specialty that provides both primary and comprehensive preventive and therapeutic oral health care for infants and children through adolescence, including those with special health care needs.

MSD/Periodontics

Periodontics is that specialty of dentistry which encompasses the prevention, diagnosis, and treatment of diseases of the supporting and surrounding tissues of the teeth or their substitutes and the maintenance of the health, function and aesthetics of these structures and tissues.

MSD/Prosthodontics

Prosthodontics is the dental specialty pertaining to the diagnosis, treatment planning, rehabilitation and maintenance of the oral function, comfort, appearance and health of patients with clinical conditions associated with missing or deficient teeth and/or oral and maxillofacial tissues using biocompatible substitutes.

Admission Requirements

After acceptance into an Advanced Specialty Certificate Program in Endodontics, Orthodontics, Pediatric Dentistry, Periodontics or Prosthodontics.

Applications are not processed until the application fee is received and all required application materials have been received by the Graduate School, Graduate Admissions.

Admission Credentials

- Graduate Application (<http://louisville.edu/graduate/futurestudents/apply-materials/application/>) submitted to the Graduate School
- Application fee
- Official transcripts of all college coursework, including evidence of a baccalaureate degree. The minimum grade point average that will be considered for unconditional acceptance and admission is GPA 3.0 (on a 4-point scale). Applicants with DMD degrees from dental schools that do not provide grades are still eligible to apply.
- Two letters of recommendation
- TOEFL, Duolingo or IELTS scores are required if English is not the applicant's native language. The minimum acceptable proficiency scores are as follows: TOEFL (80), Duolingo (105) and IELTS (6.5).
- For international applicants, Official Course-by-Course Evaluation Report from ECE (Educational Credential Evaluators, Inc.), www.ece.org (<http://www.ece.org>).
- Any provisional or special conditions acceptances shall be made on an individual basis and shall require a statement of the rationale for the exception, plans for monitoring progress and performance and stated success criteria. Such justification must be made in writing and must be accepted by the Vice Provost for Graduate Affairs. This will allow consideration of special circumstances in which the potential for high quality graduate performance has been clearly demonstrated by other means.

Program Requirements

All of the specialty programs will require eleven (11) credit hours in the following courses:

MSD Core Coursework

| Code | Title | Hours |
|----------|--|-------|
| OIID 501 | Biomedical Data Analysis: Experimental Design and Statistics | 3 |
| OIID 601 | Introduction to Oral Biology Research | 2 |
| OIID 606 | Oral Biology Communication | 2 |
| OBIO 617 | Advanced Oral Pathology | 1 |
| OBIO 622 | Multiple-Disciplinary Seminars | 1 |
| ASNB 675 | Advanced Head and Neck Anatomy | 2 |

MSD Electives

All of the specialty programs are also required to take at least eight (8) credits hours from the following list of electives:

| Code | Title | Hours |
|--|--|-------|
| Oral Immunology and Infectious Diseases Electives | | |
| OIID 600 | Concepts in Oral Immunology | 2 |
| OIID 604 | Oral Microbiology | 3 |
| OIID 605 | Oral Health Seminars | 0.5 |
| OIID 610 | Advanced Topics in Oral Biology ¹ | 1-4 |
| Oral Biology Electives | | |
| OBIO 611 | Craniofacial Osteology | 1-3 |
| OBIO 612 | Craniomaxillofacial Diagnostic Imaging | 2-4 |

| | | |
|----------|--|-----|
| OBIO 613 | The Diagnosis & Treatment of Temporomandibular Disorders | 1 |
| OBIO 614 | Advanced Oral Diagnosis and Oral Medicine | 1 |
| OBIO 615 | Advanced Clinical Pharmacology | 1 |
| OBIO 616 | Overview of Medical Genetics in Oro-Facial Disease | 1.5 |
| OBIO 623 | Advanced Implantology | 1 |

Research/Thesis

In addition to these 19 credit hours, each postgraduate student/resident will complete a research project that will be supervised by the specialty program director or a designated faculty member.

| Code | Title | Hours |
|----------|-------------------|-------|
| OIID 619 | Graduate Research | 1-8 |
| OIID 620 | Thesis | 1-8 |

| Code | Title | Hours |
|----------------------------|-------|-----------|
| Total Minimum Hours | | 31 |

In addition to the completion of the core curriculum and the postgraduate research project, there are didactic and clinical courses required for the completion of the necessary hours needed for each certificate (see Overview tab).

- ¹ Prerequisite: OIID 600 or consent of instructor. Selected areas will be investigated in depth, using one or more of a variety of formats, including lectures, seminars, tutorials, and research projects.