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
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.

<table>
<thead>
<tr>
<th>M.S.D./Specialty Programs</th>
<th>Credit Hours</th>
<th>Time to Completion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Endodontics</td>
<td>69</td>
<td>2 years</td>
</tr>
<tr>
<td>Orthodontics</td>
<td>72</td>
<td>2 years</td>
</tr>
<tr>
<td>Pediatric Dentistry</td>
<td>70</td>
<td>2 years</td>
</tr>
<tr>
<td>Periodontics</td>
<td>103.5</td>
<td>3 years</td>
</tr>
<tr>
<td>Prosthodontics</td>
<td>94</td>
<td>3 years</td>
</tr>
</tbody>
</table>

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 esthetics 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, please complete the application form available online
at louisville.edu/graduate/apply.
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**

- Application submitted to the Graduate School
- Application fee
- Official transcripts of all college coursework, including evidence of a baccalaureate degree
- Two (2) letters of recommendation
- TOEFL scores, if English is not the applicant’s native language

**Program Requirements**

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

### MSD Core Coursework

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>OIID 501</td>
<td>Biomedical Data Analysis: Experimental Design and Statistics</td>
<td>3</td>
</tr>
<tr>
<td>OIID 601</td>
<td>Introduction to Oral Biology Research</td>
<td>2</td>
</tr>
<tr>
<td>OIID 606</td>
<td>Oral Biology Communication</td>
<td>2</td>
</tr>
<tr>
<td>OBIO 617</td>
<td>Advanced Oral Pathology</td>
<td>1</td>
</tr>
<tr>
<td>OBIO 622</td>
<td>Multiple-Disciplinary Seminars</td>
<td>1</td>
</tr>
<tr>
<td>ASNB 675</td>
<td>Advanced Head and Neck Anatomy</td>
<td>2</td>
</tr>
</tbody>
</table>

### MSD Electives

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

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>OIID 600</td>
<td>Concepts in Oral Immunology</td>
<td>2</td>
</tr>
<tr>
<td>OIID 604</td>
<td>Oral Microbiology</td>
<td>3</td>
</tr>
<tr>
<td>OIID 605</td>
<td>Oral Health Seminars</td>
<td>0.5</td>
</tr>
<tr>
<td>OIID 610</td>
<td>Advanced Topics in Oral Biology ¹</td>
<td>1-4</td>
</tr>
</tbody>
</table>

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.

### 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.

<table>
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<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>OIID 619</td>
<td>Graduate Research</td>
<td>1-8</td>
</tr>
<tr>
<td>OIID 620</td>
<td>Thesis</td>
<td>1-8</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
</table>

Total Minimum Hours 31