

# ORAL BIOLOGY (MS)



## Master of Science in Oral Biology

Unit: School of Dentistry (<http://louisville.edu/dentistry/>) (GD)  
 Program Webpage (<https://louisville.edu/dentistry/degrees/oralbiology/msob/>)  
 Academic Plan Code(s): OBIOMS

## Program Information

The School of Dentistry offers a research-based program leading to the Master of Science degree in Oral Biology. The program is directed toward an in-depth understanding of the biology of the oral cavity and processes leading to disease, including the interactions between oral and systemic health. Students obtain the scientific knowledge and biomedical skills required to perform contemporary dental research. This is a research-based degree for which each student completes a thesis project under the guidance of a faculty mentor. Research projects include basic, clinical, and translational studies.

The MS in Oral Biology offers training important to persons wishing to pursue a career in either academic or clinical dentistry or to enter the biotechnology sector or advance to a PhD. The program is available to students wishing to obtain only the MS in Oral Biology degree, as well as to students currently enrolled in the DMD degree program wishing to earn a dual degree (DMD/MS), and persons who have previously earned a DMD or MD (or equivalent) degree, including international applicants. See [louisville.edu/dentistry/degrees/oralbiology](http://louisville.edu/dentistry/degrees/oralbiology/) (<http://louisville.edu/dentistry/degrees/oralbiology/>).

Areas for research training include: molecular, cellular and craniofacial biology; craniomaxillofacial diagnostic imaging; neural crest-related craniofacial and cardiovascular disorders; regulation of gene transcription; oral microbiology and immunology; cellular mechanisms of salivary gland secretion; birth defects; infection control; protein glycosylation; protein expression and trafficking; periodontology; dental materials science; orthodontics; endodontics; prosthodontics; and health services research related to dentistry. Developmental biology, oral microbiology, and innate immunology are particular strengths of the program.

A minimum of 30 credit hours is needed for the MS degree. Requirements for the degree include courses in introductory and advanced oral biology and in data analysis, participation in seminars, development of a biomedical research project, and a thesis.

Individualized programs are developed by students working with their thesis advisor and graduate committee. The graduate committee also approves proposed thesis research, reviews the thesis research, reviews

the thesis for acceptance, and administers a final oral examination. Additional important information about the program is available in the Oral Biology Program Guide (<http://louisville.edu/dentistry/degrees/oralbiology/msob/curriculum/>).

## Admission Requirements

Information about application process is available on the Oral Biology program website (<http://louisville.edu/dentistry/degrees/oralbiology/msob/admissions/>).

Graduate application for the program is online. There is a non-refundable application fee. Applications are not processed until the application fee is received and all required application materials have been received by the Graduate School.

Credentials listed below should be sent to the Graduate School, Graduate Admissions, by the following admission deadlines for complete applications:

**June 1** for Fall

Applications that are not complete by the deadline may not be reviewed in time for registration.

Students currently enrolled in the DMD degree program who wish to also apply to the MS degree in Oral Biology program should meet with the Program Director or Director of Student Affairs to determine a timeline for making an application.

## Admission Credentials

(See Oral Biology Program Guide (<http://louisville.edu/dentistry/degrees/oralbiology/msob/admissions/>))

- Graduate Application (<http://louisville.edu/graduate/futurestudents/apply-materials/application/>) and application fee
- Transcripts of all college coursework, including evidence of a baccalaureate degree
- Graduate Record Examination scores or acceptable scores on the DAT or National Boards Dental Exam (NBDE)
- Three letters of recommendation which document your research experience or academic ability
- A personal statement of research experience or interest in research, and your career goals
- TOEFL, IELTS or Duolingo English language proficiency scores, if English is not applicant's native language.
- Certification of academic credentials with course-by course evaluation (via WES or ECE) for international applicants.

## Program Requirements

The *minimum* requirement for the MS Oral Biology degree is **30 credit hours**. At least one-half of the credits counting toward the degree (exclusive of thesis) must be in courses open to graduate students only (600 level or above).

| Code                              | Title  | Hours    |
|-----------------------------------|--|----------|
| <b>Major Subject Core Courses</b> |  | <b>8</b> |
| OIID 501                          | Biomedical Data Analysis: Experimental Design and Statistics |          |
| OIID 601                          | Introduction to Oral Biology Research                        |          |
| OIID 605                          | Oral Health Seminars (2 semesters, 0.5 credit hours each)    |          |

OIID 606 Oral Biology Communication <sup>1</sup>

**Major Subject Selective Courses (see list below) 7-8**

**Thesis Research Requirements 14-15**

OIID 619 Graduate Research (minimum of eight (8) credit hours required)

OIID 620 Thesis (minimum of six (6) credit hours required)

**Minimum Total Hours 30**

## Major Subject Selective Courses

In addition to the list below, courses may be chosen from any 600-level courses offered by the University of Louisville that are deemed to be relevant and applicable to the student's program of study and thesis research, with approval by the student's thesis advisor/director and the Program Director.

| Code     | Title   | Hours |
|----------|---|-------|
| OIID 600 | Concepts in Oral Immunology                                     | 2     |
| OIID 604 | Oral Infections   | 3     |
| OIID 610 | Advanced Topics in Oral Biology <sup>2</sup>                    | 1-4   |
| OBIO 611 | Craniofacial Osteology  | 1-3   |
| OBIO 612 | Craniofacial Diagnostic Imaging                                 | 2-4   |
| OBIO 613 | The Diagnosis & Treatment of Temporomandibular Disorders        | 1     |
| OBIO 614 | Advanced Oral Diagnosis and Oral Medicine <sup>2</sup>          | 1     |
| OBIO 615 | Advanced Clinical Pharmacology <sup>2</sup>                     | 1     |
| OBIO 616 | Overview of Medical Genetics in Oro-Facial Disease <sup>3</sup> | 1.5   |
| OBIO 617 | Advanced Oral Pathology <sup>2</sup>                            | 1     |
| BIOC 668 | Molecular Biology <sup>2</sup>                                  | 4     |

<sup>1</sup> Prerequisite: OIID 601 Introduction to Oral Biology Research

<sup>2</sup> Requires course director approval. Graduate-level clinical courses may require DMD or equivalent.

<sup>3</sup> Course provided every second year.