Oral Science, MS

Learning Outcomes

Acquisition of Broad-Based Foundational Knowledge in Oral Science

- Demonstrate a broad-based understanding of the scientific disciplines relevant to oral science.
- Demonstrate mastery of the literature and background knowledge pertaining to one's chosen area of research.
- Understand the principles of biostatistical analyses and appropriate engagement with biostatisticians.

Development of Critical Thinking Skills

- Critically analyze primary scientific literature.
- Rationally debate and defend scientific viewpoints using scientific principles and critical analysis skills.
- Demonstrate problem-solving skills.

Understanding of the Scientific Method and Its Application

- Formulate hypotheses or experimental objectives that address knowledge gaps in the literature.
- Formulate a logical and feasible approach to test a hypothesis or accomplish research objectives.
- Critically evaluate results and draw appropriate conclusions from the data.

Proficiency in Research

- Conduct research in a responsible and ethical manner.
- Carry out an in-depth research project and contribute intellectually and technically to all parts of its development, execution, and analysis.

Proficiency in Scientific Communication

- Demonstrate proficiency in scientific writing as evidenced by first-author manuscripts and by composing grant applications.
- Organize, defend, and communicate ideas effectively in scientific oral presentations and settings.

Interpersonal and Leadership Skills

- Demonstrate an ability to work, when appropriate, in teams or collaborative settings with a diverse workforce.
- Develop leadership skills, commensurate with experience, facilitate group discussions, teach, and/or conduct meetings.
- Effectively mentor and motivate subordinates and/or peers.
- Respond appropriately to positive or negative feedback.

Requirements

The Master of Science program in oral science requires a minimum of 30–33 s.h. of graduate credit, including independent research leading to a thesis and a final examination.

Students pursuing the MS must be enrolled in a clinical specialty training program offered by a College of Dentistry department. Specific course requirements vary depending on the clinical specialty. Students typically complete the MS and the clinical specialty training program in three years of study.

The master's program is offered in conjunction with a certificate in one of six clinical subprograms: endodontics, operative dentistry, oral and maxillofacial pathology, oral and maxillofacial radiology, periodontics, or prosthodontics.

Core Courses

The following courses are required for all students seeking the MS in oral science.

Course #	Title	Hours
All of these:		
ORSC:5210	Dental Sciences Research Methodology	2
ORSC:5212	Statistical Methods for Dental Research	3
ORSC:5215	Research Design in Dentistry	2

Endodontics Subprogram

The subprogram in endodontics requires a minimum of 32 s.h. of graduate credit (24 s.h. of didactic credit including the core courses and 8 s.h. of research credit). Students enrolled in the professional certificate in endodontics have the option to complete the MS in oral science, endodontics subprogram and may be able to use some courses to satisfy requirements in both programs. The following coursework is required.

Course #	Title	Hours
All of these:		
ORSC:5240	Pathophysiology of the Pulp-Dentin Complex	2
ORSC:5260	Bone and Tooth Support Structure and Implants	2
ORSC:5275	Oral Microbiology and Immunology	2
ORSC:5280	Advanced Dental Therapeutics	1
ORSC:5300	Dental Management for Patients With Complex Medical History	1
ENDO:5260	Current Literature in Endodontics	1
ENDO:5700	Endodontic Surgery Conference	2
ENDO:5701	Advanced Clinical Endodontics (taken twice for 3 s.h. each)	6
This research course:		
ORSC:5600	Research in Oral Science (taken multiple times for a total of 8 s.h.)	8

Operative Dentistry Subprogram

The MS in oral science with a subprogram in operative dentistry requires a minimum of 30 s.h. of graduate credit (21 s.h. of didactic credit including the core courses and 9 s.h. of research credit). Students enrolled in the professional certificate in operative dentistry are required to complete the MS or PhD in oral science, operative dentistry subprogram and may be able to use some courses to satisfy requirements in both programs. If students have already completed a master's or doctoral program equivalent to a U.S. program, they may

contact the program director to see if this requirement may be waived. The following coursework is required.

Course #	Title	Hours
All of these:		
ORSC:5200	Seminars in Dental Research (taken three times for 1 s.h. each)	3
ORSC:5240	Pathophysiology of the Pulp-Dentin Complex	2
ORSC:5250	Current Concepts of Cariology	2
ORSC:5280	Advanced Dental Therapeutics	1
DPH:6002	Research Protocol Seminar	2
GRAD:6217	Seminar in College Teaching	2
PROS:6224/ OPER:6225	Graduate Restorative Materials	2
This research course:		
ORSC:5600	Research in Oral Science (taken multiple times for a total of 9 s.h.)	9

Oral and Maxillofacial Pathology Subprogram

The Master of Science in oral science with a subprogram of oral and maxillofacial pathology is not currently accepting new applicants.

The MS in oral science with a subprogram in oral and maxillofacial pathology requires a minimum of 33 s.h. of graduate credit (24 s.h. of didactic credit including the core courses and 9 s.h. of research credit). Students enrolled in the professional certificate in oral and maxillofacial pathology have the option to complete the MS in oral science, oral and maxillofacial pathology subprogram and may be able to use some courses to satisfy requirements in both programs. The following coursework is required.

Course #	Title	Hours
All of these:		
ORSC:5200	Seminars in Dental Research (taken twice for 1 s.h. each)	2
ORSC:5280	Advanced Dental Therapeutics	1
DPH:6017	Teaching Methods and Evaluation	2
MED:8133	Mechanisms of Health and Disease II	7
OPRM:5200	Stomatology Literature Review	1
OPRM:5226	Oral Pathology for Graduate Students	1
OPRM:5256	Advanced Oral Pathology	1
OTO:8199	Foundations of Otolaryngology	2
This research course:		
ORSC:5600	Research in Oral Science (taken multiple times for a total of 9 s.h.)	9

Oral and Maxillofacial Radiology Subprogram

The MS in oral science with a subprogram in oral and maxillofacial radiology requires a minimum of 30 s.h. of graduate credit (22 s.h. of didactic credit including the core courses and 8 s.h. of research credit). Students enrolled in the professional certificate in oral and maxillofacial radiology have the option to complete the MS in oral science, oral and maxillofacial radiology subprogram. The following coursework is required.

Course #	Title	Hours
All of these:		
FRRB:3110	Medical Physics I	1
FRRB:3130	Introduction to Radiation Safety and Radiobiology	1
FRRB:3215	Medical Physics II	2
OPRM:5200	Stomatology Literature Review	1
OPRM:5226	Oral Pathology for Graduate Students	1
OPRM:5242	Clinical Oral and Maxillofacial Radiology	1
OPRM:5243	Practical Oral and Maxillofacial Radiology	1
OPRM:5244	Technical Oral and Maxillofacial Radiology	1
OPRM:5245	Head and Neck Radiology	1
OTO:8199	Foundations of Otolaryngology	2
PATH:8133	Introduction to Human Pathology for Graduate Students	3
This research course:		
ORSC:5600	Research in Oral Science (taken at least once, may be taken multiple times for a total of 8 s.h.)	8

Periodontics Subprogram

The MS in oral science with a subprogram in periodontics requires a minimum of 32 s.h. of graduate credit (23 s.h. of didactic credit including the core courses and 9 s.h. of research credit). Students enrolled in the professional certificate in periodontics are required to complete the MS in oral science, periodontics subprogram and may be able to use some courses to satisfy requirements in both programs. The following coursework is required.

Course #	Title	Hours
All of these:		
ORSC:5260	Bone and Tooth Support Structure and Implants	2
ORSC:5275	Oral Microbiology and Immunology	2
ORSC:5280	Advanced Dental Therapeutics	1
OMFS:5208	Pain and Anxiety Control	1
OPRM:5226	Oral Pathology for Graduate Students	1

PERI:5220	Periodontics Classic Literature Review (taken multiple times for a total of 6 s.h.)	6
PERI:5710	Case Management Seminar	1
PERI:7208	Recent Advances in Periodontics	1
PERI:7701	Practice Teaching in Periodontics	1
This research course:		
ORSC:5600	Research in Oral Science (taken multiple times for a total of 9 s.h.)	9

Prosthodontics Subprogram

The MS in oral science with a subprogram in prosthodontics requires a minimum of 30 s.h. of graduate credit (22 s.h. of didactic credit including the core courses and 8 s.h. of research credit). Students enrolled in the professional certificate in prosthodontics are required to complete the MS in oral science, prosthodontics subprogram and may be able to use some courses to satisfy requirements in both programs. The following coursework is required.

Course #	Title	Hours
All of these:		
ORSC:5240	Pathophysiology of the Pulp-Dentin Complex	1
ORSC:5260	Bone and Tooth Support Structure and Implants	2
ORSC:5275	Oral Microbiology and Immunology	2
ORSC:5280	Advanced Dental Therapeutics	1
DPH:6002	Research Protocol Seminar	2
OMFS:5208	Pain and Anxiety Control	1
OPRM:5226	Oral Pathology for Graduate Students	1
OTO:8199	Foundations of Otolaryngology	3
PROS:6224	Graduate Restorative Materials	2
This research course:		
ORSC:5600	Research in Oral Science (taken multiple times for a total of 8 s.h.)	8

Graduate Education

Graduate education prepares students with advanced knowledge and skills in specialized fields. At the University of Iowa, the Graduate College advocates for student-centered graduate education and supports equitable application of rules and policies across graduate programs.

Academics

University of Iowa graduate credentials are regulated by policies and requirements found in the Graduate College Manual of Rules and Regulations. This includes minimum grade-point average (GPA) requirements for academic standing and degree conferral. The Graduate College sets the minimum requirement. Individual graduate programs may establish higher GPA requirements.

Admissions

Graduate student applicants must meet admission requirements for both the Graduate College and the program to which they have applied. University of Iowa graduate admission requirements are published by the Graduate College and on the Graduate Admissions website.

Financial Support

Graduate students might be eligible for financial support. Several contingencies apply, including degree program and award type, satisfactory progress toward degree, satisfactory completion of all duties related to an appointment, and availability of funding. Graduate students should inquire directly with their program for more information about funding availability. The Graduate Student Employment Standards govern the employment relationship between the University of Iowa and all graduate teaching and research assistants in all matters except wages, which are covered by an existing collective bargaining agreement or the conditions of an applicable federal grant.

Admission

Applicants to the MS program must meet the admission requirements of the Graduate College and those specified by the clinical department.

A personal interview may be requested. Programs normally begin July 1 each year.