

# Dentistry

|                      |                                                            |
|----------------------|------------------------------------------------------------|
| Degree Offered:      | M.S.                                                       |
| Director, Dentistry: | Dr. Amjad Javed                                            |
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## Program Information

Advanced clinical specialty training and research, leading to the degree of Master of Science in Dentistry, is offered to meet two areas of need: the preparation of qualified teachers and investigators in the various branches of academic dentistry and the preparation of fully trained dental specialists. The program is a combination of the conventional work for the M.S. degree plus the achievement of proficiency in some phase of clinical dentistry. The course of study requires a minimum of two academic years; most students will require three years to complete the work. The applicant must be a graduate of an accredited school of dentistry, or an undergraduate school and must have achieved, in both predental and dental requirements, a superior scholastic record.

At the time of enrollment in the Graduate School, the student is assigned an appropriate faculty advisor, who works with the student in outlining a course of study consistent with objectives. This curriculum must cover the three areas of a selected phase of clinical dentistry, a related basic health science, and research.

## Major and Minor

The major field of study must be selected from the following: dental biomaterials, endodontics, general dentistry, hospital dentistry, maxillofacial prosthetics, oral surgery, orthodontics, pediatric dentistry, periodontics, prosthodontics, public health dentistry, or oral biology. The program requires a minimum of 30 graduate credits. Not less than 18 semester hours of credit in the program must be in the major subject, with the minimum acceptable grade being B. A minor must involve at least six semester hours of study in one or two basic health science departments related to the student's major and research interests.

By the time the student has been in residence one year and has finished some of both major and minor courses, the student and the advisor should recommend to the Graduate School dean at least two additional graduate faculty members, one from outside the student's specialty area, for appointment to the graduate study committee. The student should discuss with his/her committee plans for the remaining course of study, including a proposed thesis title and outline of experimental design. Depending upon the nature of the research plan, it may be desirable for a different advisor to be appointed, serving either as co-chair or as new chair of the graduate study committee. At this time, demonstration of a reading knowledge related to literature review, competence in research and experimental design, understanding of biostatistics, experience with computer and other techniques may be required, as appropriate to the student's investigation.

## Admission to Candidacy

When the graduate study committee is satisfied that the student is prepared to undertake the research, the student is admitted to candidacy

for the master's degree. This step should be taken at least two semesters before the anticipated date of completion of the program.

## Research and Thesis

Sufficient research work to train the candidate in the principles and methods of scientific investigation is required. The research project should involve the student's own intensive work in some area of dentistry, preferably related to the basic health sciences. The thesis is based on the research study and must show the candidate's ability to delineate a problem, logically plan its solution, and present the results of the work in an orderly fashion. Familiarity with the literature of the field is expected.

## Final Examination

The final oral examination is administered by the student's graduate study committee before the deadline is set by the Graduate School. The examination begins with oral presentation and defense of the thesis and may include any work fundamental thereto. At the close of the examination, the committee votes on the candidate, taking into account all of the work undertaken. Majority approval is required.

## Additional Information

|                                                                             |                                                                                                      |
|-----------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------|
| Deadline for Entry Term(s):                                                 | Consult Program Director for information                                                             |
| Deadline for All Application Materials to be in the Graduate School Office: | Variable                                                                                             |
| Number of Evaluation Forms Required:                                        | Three                                                                                                |
| Entrance Tests                                                              | DDS (TOEFL and TWE also required for international applicants whose native language is not English.) |

## Contact Information

For detailed information, contact the graduate program director, Dr. Amjad Javed, University of Alabama School of Dentistry, School of Dentistry Building, SDB 714, 1919 Seventh Avenue South, Birmingham, AL 35294-0007.

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## Master of Science with Emphasis in Oral Biology

The School of Dentistry in collaboration with the joint basic science Departments at The University of Alabama offers graduate studies leading to a Master of Science degree with emphasis in Oral Biology. The objective of the program is to relate basic biological sciences to health and disease of the oral cavity. This program is designed for individuals holding a D.D.S., D.M.D., or B.S. in Science (e.g. biology, chemistry etc) with little or no experience in basic research. This program will provide insight into dental academics and teaching in basic or applied research.

Students are required to pursue studies in oral biology and in the basic biological sciences. These studies include course work, seminars,

journal club, and a laboratory component. Course work includes formal lectures from within the School of Dentistry and courses offered by the basic sciences departments, School of Public Health and the School of Medicine. The seminars and journal club include the "Dean's Seminar Series" and the Oral and Skeletal Biology Journal Club and other Research seminars within UAB. The Seminars cover a wide array of topics relevant to various research areas as well as other disciplines of dentistry or dental education. A significant portion of the program is devoted to the design and completion of a thesis research project in the form of one publishable paper in a reputable scientific journal which is a requirement of the program. Thesis research will be carried out under the supervision of a faculty member. Faculty involved in the Master of Science program with emphasis in Oral Biology are actively engaged in research that represents a variety of oral and basic biomedical disciplines within the UAB. The diversity of the research interests offers opportunities for students to pursue studies in a stimulating research environment.

The program requires a **minimum of 30 graduate credits**. Of these, at least 24 credits must be selected from graduate-level courses approved for the program and a minimum of 6 credits at the master's research level. Each student must orally defend a master's thesis based on their research. If the applicant holds a D.D.S. or D.M.D. degree, the Master in Science may be combined with a clinical dental specialty training only after acceptance into the clinical program.

## Admission

Applicants must hold a B.S., D.D.S., or D.M.D., or an equivalent degree and should possess a cumulative grade-point average of at least 3.00 on a 4.00 scale. Standardized test such as GRE or DAT is required for all applicants. Students whose first language is not English must earn a score of 560 or better on the Test of English as a Foreign Language (TOEFL).

Applicants are asked to submit a statement describing past research experience and current research interests, and stating how completion of the Master in Science program fits into their career goals.

For International applicants; transcripts and all related material should be received no later than **February 28** to enroll in the fall semester of the same year.

For US applicants; transcripts and all related material should be received no later than **March 31** to enroll in the fall semester of the same year.

Financial assistance is not available. Students must show that they can support themselves.

## Contact

For further information and application materials, contact:

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## M.S. in Dentistry

Select 6 classes from the list below - 18 hours

| Requirements                                              | Hours |
|-----------------------------------------------------------|-------|
| PG 525 Design and Analysis of Clinical Dental Research    | 3     |
| PG 583 Graduate Cariology                                 | 3     |
| OB 602 Pharmacology and Therapeutics for Dentistry        | 3     |
| OB 604 Clinical Applied Dent Material                     | 3     |
| OB 620 Oral Microbiology and Immunology                   | 3     |
| OB 622 Biochemistry of Connective Tissue and Bone         | 3     |
| CD 626 Graduate Implantology II                           | 3     |
| CD 639 Dental Management of Medically Compromised Patient | 2     |
| CD 640 Physical Diagnosis                                 | 3     |
| CD 646 Multidisciplinary Seminars I                       | 3     |
| CD 667 Selected Topics in Anatomy of the Head and Neck    | 3     |
| CD 689 Conscious Sedation                                 | 3     |
| CD 697 Advanced Restorative Technique                     | 3     |
| CD 717 Multidisciplinary Seminars II                      | 3     |
| CD 721 Oral & Skeletal Biology Jour                       | 2     |
| CD 722 Advanced Craniofacial Growth                       | 3     |
| CD 727 Craniofacial Syndrome Series                       | 3     |
| CD 728 Advanced Oral Pathology                            | 3     |

### Non-Thesis Research - 6 hours

| Requirements                              | Hours |
|-------------------------------------------|-------|
| CD 698 Master s Level Non-Thesis Research | 1-6   |

### Thesis Research - 6 hours

| Requirements                          | Hours |
|---------------------------------------|-------|
| OB 699 Thesis Research                | 1-6   |
| or                                    |       |
| CD 699 Master s Level Thesis Research | 1-6   |

### Total Hours - 30

## CD-Clinical Dentistry Courses

**CD 519. Medical Emergencies Dent Perio. 3 Hours.**

**CD 532. Medical Emergencies Dent Perio. 3 Hours.**

**CD 601. Advanced Endodontic Seminar I. 3 Hours.**  
Special Topics in Endodontics.

**CD 602. Special Topics in General Dentistry. 3-6 Hours.**

**CD 603. Special Topics in Oral and Maxillofacial Surgery. 1-12 Hour.**

**CD 604. Special Topics in Orthodontics. 3 Hours.**

**CD 605. Special Topics in Pediatric Dentistry. 1-6 Hour.**

**CD 606. Special Topics in Periodontics. 3-12 Hours.**

**CD 607. Removable Prosthodontic Seminar. 1-12 Hour.**

**CD 608. Special Topics in Radiology. 1-6 Hour.**

**CD 609. Fixed Prosthodontics Seminar. 1-12 Hour.**

**CD 610. Introduction to Medical Genetics. 3 Hours.**

**CD 611. Special Topics in Maxillofacial Prosthodontics. 1-6 Hour.**

**CD 612. Advanced Prosthodontics Clinic First Year Clinic. 1-12 Hour.**

**CD 613. Special Topics in Hospital Dentistry. 1-6 Hour.**

**CD 614. Periodonal Case Conferences. 3 Hours.**

**CD 615. Periodontal Literature Review Seminars. 3 Hours.**

**CD 616. Periodontal Board Topics. 1-3 Hour.**

**CD 617. Maxillofacial Pathology. 3 Hours.**

**CD 618. Maxillofacial Orthognathic Surgery. 3 Hours.**

**CD 619. Dentoalveolar Surgery. 3 Hours.**

**CD 620. Clinical Pediatric Dentistry I. 3-6 Hours.**

**CD 621. POSTGRADUATE MAXILLOFACIAL TRAUMA. 3 Hours.**

**CD 622. ORAL and MAXILLOFACIAL MICROBIOLOGY SEMINAR. 3 Hours.**

**ORAL and MAXILLOFACIAL MICROBIOLOGY SEMINAR.**

**CD 623. POSTGRAD OMS SURGERY ANATOMY SEMINAR. 3 Hours.**

**CD 624. OMS Pathology Seminar. 3 Hours.**

**CD 625. Design and Analysis in Clinical Dental Research. 3 Hours.**

**CD 626. Graduate Implantology II. 3 Hours.**

**CD 627. Biocompatibility Testing/Biodegradation Phenomena. 3 Hours.**

**CD 628. Enamel Properties Acid Etching and Adhesion. 4 Hours.**

**CD 629. Ceramic Cements Alloy-Ceramic Systems Color Meas. 3 Hours.**

**CD 630. Clinical Biomaterials Research Methods. 3 Hours.**

**CD 631. Polymeric Biomaterials. 3 Hours.**

**CD 632. Biomaterials Seminar. 1 Hour.**

**CD 633. Alloy Systems in Dentistry. 3 Hours.**

**CD 634. Craniofacial Genetics. 3 Hours.**

**CD 635. Pediatric Dentistry Journal Club. 2 Hours.**

**CD 636. Hospital Dentistry. 2 Hours.**

**CD 637. Growth and Development-Genetics. 3 Hours.**

**CD 638. Current Topics in Dentistry. 1 Hour.**

**CD 639. Dental Management of Medically Compromised Patient. 2 Hours.**

**CD 640. Physical Diagnosis. 3 Hours.**

**CD 641. Advanced Dental Materials III. 3 Hours.**

The resident will develop an in-depth understanding of the clinical applications and effective manipulation of current dental materials. Dentin bonding agents, composite resin selection, placement and polymerization will be covered. An overview of biomaterials for dental implants, and ceramic materials for prosthodontics will also be presented.

**CD 642. Biomaterials Book Review. 3 Hours.**

The purpose of the book review is to strengthen the basic understanding of properties and behavior of different dental materials.

**CD 643. Adv Clinical Prosth III. 6 Hours.**

Advanced Clinical Prosthodontics III will provide students with a breadth of clinical experience in fixed, removable, implant, surgical, maxillofacial and other complex prosthodontics.

**CD 644. Evidence Based Dentistry. 3 Hours.**

Evidence based dentistry will teach students how to use literature as basis of clinical decisions.

**CD 645. PBL: Adv Prosthodontics Topics. 3 Hours.**

Topics in Advanced Prosthodontics. Permission of instructor required.

**CD 646. Multidisciplinary Seminars I. 3 Hours.**

Multidisciplinary seminars will teach the students how to interact with other disciplines in an informal setting and learn from these other disciplines.

**CD 647. Treatment Planning Conference. 3 Hours.**

Treatment planning conference will teach students how to generate a succinct and reasonable treatment sequence.

**CD 648. Prosthodontic Case Conference. 3 Hours.**

Prosthodontic case conference will teach students how to present completed treatment, and how to critically and professionally evaluate treatment outcomes.

**CD 649. Prosthodontics Lit Review. 3 Hours.**

Prosthodontics literature review will teach students how to critically evaluate literature, and to be familiar with current concepts in prosthodontics.

**CD 650. Advanced Topics in Hospital Dentistry. 1-6 Hour.****CD 651. Advanced Endodontics Seminar II. 3 Hours.**

Advanced Topics in Endodontics.

**CD 652. Advanced Topics in General Dentistry. 3-6 Hours.****CD 653. Advanced Topics in Oral Surgery. 3-6 Hours.****CD 654. Advanced Topics in Orthodontics. 3 Hours.****CD 655. Advanced Topics in Pediatric Dentistry. 1-6 Hour.****CD 656. Advanced Topics in Periodontics. 1-12 Hour.****CD 657. Advanced Clinical Prosthodontics Second Year Clin. 3-12 Hours.****CD 658. Advanced Topics in Radiology. 1-12 Hour.****CD 659. Advanced Topics Fixed Prosthodontics. 3-12 Hours.****CD 660. Advanced Topics in Maxillofacial Prosthetics. 1-6 Hour.****CD 661. Physical Properties of Biomaterials. 1-3 Hour.****CD 662. Laboratory Methods for Biomaterials Research. 2-4 Hours.****CD 663. Diagnosis and Screening Procedures in Dentistry. 3 Hours.****CD 664. Grand Rounds in Pediatric Dentistry. 2-3 Hours.****CD 665. Maxillofacial Seminar. 3 Hours.**

Physiology and Concepts of Occlusion.

**CD 666. Clinical Maxillofacial Prosthetics. 1-3 Hour.****CD 667. Selected Topics in Anatomy of the Head and Neck. 3 Hours.****CD 668. Postgraduate Oral Pathology. 3 Hours.****CD 669. Clinical Pediatric Dentistry II. 3 Hours.****CD 670. Board Case Reviews in Pediatric Dentistry. 3 Hours.****CD 671. Case Presentations in Pediatric Dentistry. 1 Hour.****CD 672. Advanced Topics in OMS. 5 Hours.****CD 673. Special Topics in OMS Trauma. 4 Hours.****CD 674. Advanced Topics in OMS - Orthognathic. 4 Hours.**

Advanced Topics in OMS - Orthognathic.

**CD 675. Special Topics in OMS - Patient Care. 4 Hours.****CD 676. Advanced Topics in Oral Pathology. 4 Hours.****CD 677. Advanced Prosthodontics Third Year Clinic. 3 Hours.****CD 678. Board Preparation in Pediatric Dentistry. 3 Hours.**

Review course for pediatric dental residents.

**CD 679. Fundamentals of Pediatric Dentistry. 1-6 Hour.****CD 680. Dental Clinical Pathology. 3 Hours.****CD 681. Clinical Pedodontics III. 3 Hours.****CD 682. Special Topics in Endodontics. 3 Hours.****CD 683. Advanced Dental Materials I. 3 Hours.**

Advanced course in dental materials.

**CD 684. Advanced Dental Materials II. 3 Hours.**

Advanced course in dental materials II.

**CD 685. Advanced Endodontic First Year Clinic. 3 Hours.****CD 686. Advanced Endodontic Second Year Clinic. 3 Hours.****CD 687. Advanced Clinical Dentistry. 3 Hours.**

Advanced course in clinical dentistry.

**CD 688. Special Pathology. 1 Hour.****CD 689. Conscious Sedation. 3 Hours.****CD 690. Physiology and Concepts of Occlusion. 3 Hours.****CD 691. Special Topics in Biomaterials Science. 1-6 Hour.****CD 692. Advanced Prosthodontic Seminar. 1-12 Hour.****CD 693. Special Topics in OMS. 5 Hours.****CD 694. Advanced General Dentistry Seminars (I-IV). 1 Hour.****CD 695. Literature Review in Pediatric Dentistry. 3 Hours.****CD 696. Dental Radiology. 3 Hours.****CD 697. Advanced Restorative Technique. 3 Hours.****CD 698. Master s Level Non-Thesis Research. 1-6 Hour.****CD 699. Master s Level Thesis Research. 1-6 Hour.**

**Prerequisites:** GAC M

**CD 700. Cranio Deformities. 3 Hours.**

Embryology: Review of H&N development. Genetics: Review of H&N disorders. Cleft lip: Diagnosis and management. Common craniofacial disorders; Diagnosis and management of Apert's, Crouzons, and Treacher-Collins, Hemifacial microsomia and other craniofacial disorders.

**CD 701. Post-Graduate Micro Surgery. 3 Hours.**

To understand the history of microsurgery; materials and instruments; coagulations and anticoagulants; technique or minor repair and vascularized tissue transfer.

**CD 702. Post-Graduate Esthetic Surgery. 3 Hours.**

Understand basic concepts of facial cosmetic surgery and become competent in diagnosis and treatment planning. The resident should learn surgery techniques of facial cosmetic surgery.

**CD 703. Post-Graduate TMJ Disorders. 3 Hours.**

To Understand the anatomy and biomechanics of the TMJ; the pathological conditions that affect the TMJ; the imaging modalities that can be utilized to aid in diagnosing TMD; and the various medical treatment options in managing TMD.

**CD 704. Post-Grad Surg Implantology. 3 Hours.**

Enrich the resident experience by providing in-depth discussion on the various surgical modalities that can aid in proper implant placement.

**CD 705. Oorthognatic Surgery. 3 Hours.**

Understand the principle of orthognatic surgery.

**CD 706. Board Exam Topics. 3 Hours.**

To allow students time for study and laboratory activities in preparation of mock board exam, or the ABP examination.

CD 707. Fundamentals I. 5 Hours.  
 CD 708. Fundamentals II. 5 Hours.  
 CD 709. Dentistry & Culture. 3 Hours.  
 CD 710. Ethics I. 3 Hours.  
 CD 711. Dental Gross Anatomy. 6 Hours.  
 CD 712. General Pathology. 3 Hours.  
 CD 713. Microbiology. 3 Hours.  
 CD 714. Pharmacology. 3 Hours.  
 CD 715. Systemic Pathology. 3 Hours.  
 CD 716. Oral Pathology. 3 Hours.  
 CD 717. Multidisciplinary Seminars II. 3 Hours.  
 CD 718. Implant Dentistry Case Conf.. 3 Hours.  
 CD 719. Implant Evidence Based Dent. 3 Hours.  
 CD 720. Surgical Placement of Implants. 3 Hours.  
 CD 721. Oral & Skeletal Biology Jour. 2 Hours.  
 CD 722. Advanced Craniofacial Growth. 3 Hours.  
 CD 723. Neuroanatomy. 6 Hours.  
 CD 724. Cardiovascular & Renal Systems. 6 Hours.  
 CD 725. Dental Microbiology. 1 Hour.  
 CD 726. Genetics. 2 Hours.  
 CD 727. Craniofacial Syndrome Series. 3 Hours.  
 CD 728. Advanced Oral Pathology. 3 Hours.  
 CD 729. TMD Interdisciplinary Problem. 3 Hours.  
 CD 730. 3-Dimensional Imaging Ortho. 3 Hours.  
 CD 731. Graduate Implantology I. 3 Hours.  
 CD 740. Advanced Restorative Tech II. 3 Hours.  
 CD 741. Esth & Restorative Dent Lect. 3 Hours.  
 CD 742. Contmp Esth & Restorative Prep. 3 Hours.  
 CD 746. Micro-Esthetics. 3 Hours.  
 CD 749. Macro Esthetics. 3 Hours.  
 CD 768. Micro Esthetics II. 3 Hours.  
 CD 772. Dentofacial Esthetics. 3 Hours.  
 CD 788. Craniofacial Syndrome SeriesII. 3 Hours.

## OB-Oral Biology Courses

OB 500. Graduate Cariology. 3 Hours.  
 OB 510. Intro to Dental Materials Res. 3 Hours.  
 OB 513. Grant Writing. 3 Hours.  
 OB 522. Biochemistry of Connective Tissue and Bone. 3 Hours.  
 OB 525. Current Issues in Nutrition and Oral Health. 3 Hours.  
 OB 563. Saliva as a Diagnostic Fluid. 3 Hours.  
 OB 590. Oral Biology Seminar. 1-2 Hour.  
 OB 598. MR Lev Non-Thesis Res. 3-6 Hours.  
 OB 599. Thesis Research. 3-6 Hours.  
 OB 600. Graduate Cariology. 3 Hours.  
 OB 601. Caries Journal Club. 1 Hour.  
 Introduce students communication skills in areas of scientific reading, presentation and use of scientific material.

OB 602. Pharmacology and Therapeutics for Dentistry. 3 Hours.  
 OB 603. Oral Inflammation and Periodontal Disease. 3 Hours.  
 Provides a fundamental knowledge base for understanding the initiation and progression of oral inflammation and how these processes mediate tissue destruction and bone loss.  
 OB 604. Clinical Applied Dent Material. 3 Hours.  
 OB 607. Prenatal Craniofacial Growth and Development. 3 Hours.  
 PRENATAL CRANIOFACIAL GROWTH and DEVELOPMENT.  
 OB 608. Special Topics in Oral Biology. 1 Hour.  
 OB 611. Saliva:Composition and Function. 3 Hours.  
 OB 616. Postgraduate Oral Histology. 3 Hours.  
 OB 620. Oral Microbiology and Immunology. 3 Hours.  
 OB 622. Biochemistry of Connective Tissue and Bone. 3 Hours.  
 Biochemistry of Connective Tissue and Bone.  
 OB 625. Current Issues in Nutrition and Oral Health. 3 Hours.  
 Current Issues in Nutrition and Oral Health.  
 OB 626. Graduate Implantology. 3 Hours.  
 OB 627. Surgical Implants in Dentistry. 3 Hours.  
 OB 630. Introduction to Clinical Trials/Epidemiology. 3 Hours.  
 OB 631. Ethics in Biomedical Research. 1 Hour.  
 OB 632. Special Topics on Mucosal Immunology. 3 Hours.  
 OB 633. Research Design and Methodology. 3 Hours.  
 OB 634. Oral Biology Journal Club. 1 Hour.  
 OB 657. Prenatal Craniofacial Growth and Development. 3 Hours.  
 PRENATAL CRANIOFACIAL GROWTH and DEVELOPMENT.  
 OB 663. Saliva as A Diagnostic Fluid. 3 Hours.  
 OB 690. Oral Biology Seminar. 1 Hour.  
 OB 696. Research Skills Enhancement. 2 Hours.  
 OB 697. Journal Club - Frontiers in Biomedical Research. 1 Hour.  
 OB 698. MR Lev Non-Thesis Res. 1-6 Hour.  
 OB 699. Thesis Research. 1-6 Hour.  
 Prerequisites: GAC M