

Dental Biomaterials (BIMA)

BIMA 6101 Mechanical Behavior of Dental Biomaterials (3 credits)

Basic principles of mechanics, elastic deformation, plastic deformation and fracture. Comparison of mechanical behavior of metallic, ceramic and polymer dental biomaterial systems. Discussion of tension, compression, shear, bending, torsion, hardness and impact tests for dental biomaterials. Includes laboratory exercises.

Level of Study: Graduate

Last four terms offered: 2022 Fall Term, 2020 Fall Term, 2018 Fall Term, 2016 Fall Term

Schedule of Classes (<https://bulletin.marquette.edu/class-search/?details&code=BIMA%206101>)

BIMA 6102 Polymeric Dental Biomaterials (2 credits)

Compositions and properties of polymers utilized in prosthetic, restorative, orthodontic, preventive, and implant dentistry. The materials include poly (methyl methacrylate), BIS-GMA, polyurethane and polyvinyl products in the form of resins, composites and microfills polymerized by heat, chemicals and ultraviolet or visible lights. Includes laboratory exercises.

Level of Study: Graduate

Last four terms offered: 2022 Fall Term, 2020 Fall Term, 2018 Fall Term, 2016 Fall Term

Schedule of Classes (<https://bulletin.marquette.edu/class-search/?details&code=BIMA%206102>)

BIMA 6151 Dental Cements (2 credits)

Compositions, setting reactions and properties of zinc phosphate, zinc oxide-eugenol, polycarboxylate, glass ionomer and resin dental cements. Effects of clinical variables and the ADA specifications related to these materials will be included. May include laboratory exercises.

Level of Study: Graduate

Last four terms offered: 2023 Spring Term, 2021 Spring Term, 2017 Spring Term, 2015 Spring Term

Schedule of Classes (<https://bulletin.marquette.edu/class-search/?details&code=BIMA%206151>)

BIMA 6152 Dental Impression Materials (2 credits)

Classification, composition and properties of the various impression materials used in restorative and prosthetic dentistry. The material systems to be discussed include impression compound, hydrocolloids, polysulfides, polyethers and silicones. May include laboratory exercises.

Level of Study: Graduate

Last four terms offered: 1996 Fall Term, 1994 Spring Term, 1992 Spring Term

Schedule of Classes (<https://bulletin.marquette.edu/class-search/?details&code=BIMA%206152>)

BIMA 6153 Dental Casting Procedures (3 credits)

History and development of dental casting procedures. Basic principles and techniques for centrifugal, vacuum and pressure casting. Solidification of metals and classification of porosities. Detailed considerations for casting of noble and base metal dental alloys. Includes laboratory exercises.

Level of Study: Graduate

Last four terms offered: 1997 Spring Term, 1994 Fall Term, 1992 Fall Term

Schedule of Classes (<https://bulletin.marquette.edu/class-search/?details&code=BIMA%206153>)

BIMA 6201 Dental Metallurgy 1 (3 credits)

Theory and application of metallurgical principles to the study of dental alloy systems. Dental amalgams, noble and base metal casting alloys, and wrought alloys. Area and extent of study determined by individual needs of student. Includes laboratory exercises.

Level of Study: Graduate

Last four terms offered: 2021 Fall Term, 2019 Fall Term, 2017 Fall Term, 2015 Fall Term

Schedule of Classes (<https://bulletin.marquette.edu/class-search/?details&code=BIMA%206201>)

BIMA 6202 Dental Metallurgy 2 (3 credits)

See BIMA 6201.

Level of Study: Graduate

Last four terms offered: 2022 Spring Term, 2020 Spring Term, 2018 Spring Term, 2016 Spring Term

Schedule of Classes (<https://bulletin.marquette.edu/class-search/?details&code=BIMA%206202>)

BIMA 6251 Dental Ceramics (3 credits)

Basic principles of ceramic structures and properties. History, properties and technology of dental porcelains, gypsum products and dental casting investments. Includes laboratory exercises.

Level of Study: Graduate

Last four terms offered: 2023 Spring Term, 2021 Spring Term, 2017 Spring Term, 2015 Spring Term

Schedule of Classes (<https://bulletin.marquette.edu/class-search/?details&code=BIMA%206251>)

BIMA 6501 Advanced Experimental Techniques for Dental Biomaterials Research 1 (1 credits)

Biomaterials Research 1 laboratory courses. Topics may vary, but will generally include scanning electron microscopy, mechanical testing procedures, and X-ray diffraction.

Prerequisite: Admission to graduate program in dental biomaterials.

Level of Study: Graduate

Last four terms offered: 1997 Spring Term

Schedule of Classes (<https://bulletin.marquette.edu/class-search/?details&code=BIMA%206501>)

BIMA 6502 Advanced Experimental Techniques for Dental Biomaterials Research 2 (1 credits)

Biomaterials Research 2 laboratory courses. Topics may vary, but will generally include scanning electron microscopy, mechanical testing procedures, and X-ray diffraction.

Prerequisite: Admission to graduate program in dental biomaterials.

Level of Study: Graduate

Schedule of Classes (<https://bulletin.marquette.edu/class-search/?details&code=BIMA%206502>)

BIMA 6570 Biomaterials Science and Engineering (3 credits)

Basic and advanced principles of dental biomaterials science. Fundamental scientific principles, and physical, mechanical, chemical and biological properties of restorative and preventive dental biomaterials. Relationships between properties and clinical performance of these materials and methods used for testing them.

Level of Study: Graduate

Last four terms offered: 2022 Spring Term, 2020 Spring Term, 2019 Spring Term, 2018 Spring Term

Schedule of Classes (<https://bulletin.marquette.edu/class-search/?details&code=BIMA%206570>)

BIMA 6601 Dental Biomaterials Literature Review 1 (1-3 credits)

Discussion of current and classic literature in dental biomaterials. Topics and journals discussed are rotated to provide an overview and range of different materials, properties, and applications. Emphasizes class discussion and presentations.

Prerequisite: Grad. stndg. in BIMA graduate program or cons. of dept.

Level of Study: Graduate

Last four terms offered: 2022 Fall Term, 2021 Fall Term, 2020 Fall Term, 2019 Fall Term

Schedule of Classes (<https://bulletin.marquette.edu/class-search/?details&code=BIMA%206601>)

BIMA 6602 Dental Biomaterials Literature Review 2 (1-3 credits)

See BIMA 6601.

Prerequisite: Grad. stndg. in BIMA graduate program or cons. of dept.

Level of Study: Graduate

Last four terms offered: 2023 Spring Term, 2022 Spring Term, 2021 Spring Term, 2020 Spring Term

Schedule of Classes (<https://bulletin.marquette.edu/class-search/?details&code=BIMA%206602>)

BIMA 6603 Dental Biomaterials Literature Review 3 (1-3 credits)

See BIMA 6601.

Prerequisite: Grad. stndg. in BIMA graduate program or cons. of dept.

Level of Study: Graduate

Last four terms offered: 2022 Fall Term, 2021 Fall Term, 2020 Fall Term, 2019 Fall Term

Schedule of Classes (<https://bulletin.marquette.edu/class-search/?details&code=BIMA%206603>)

BIMA 6604 Dental Biomaterials Literature Review 4 (1-3 credits)

See BIMA 6601.

Prerequisite: Grad. stndg. in BIMA graduate program or cons. of dept.

Level of Study: Graduate

Last four terms offered: 2023 Spring Term, 2022 Spring Term, 2021 Spring Term, 2018 Spring Term

Schedule of Classes (<https://bulletin.marquette.edu/class-search/?details&code=BIMA%206604>)

BIMA 6931 Topics in Dental Biomaterials (1-3 credits)

Practical laboratory exercises designed to provide the student with specific skill sets and analytic approaches used in modern materials research.

Level of Study: Graduate

Last four terms offered: 2008 Summer Term, 2008 Spring Term, 2007 Fall Term, 2007 Summer Term

Schedule of Classes (<https://bulletin.marquette.edu/class-search/?details&code=BIMA%206931>)

BIMA 6970 Biomaterials Seminar (1 credits)

Current topics and concepts in materials science.

Level of Study: Graduate

Last four terms offered: 2007 Spring Term, 2006 Spring Term, 2005 Spring Term, 1997 Fall Term

Schedule of Classes (<https://bulletin.marquette.edu/class-search/?details&code=BIMA%206970>)

BIMA 6980 Teaching Experience in Dental Biomaterials (1-2 credits)

Teaching and preclinical laboratory assignments in dental biomaterials for undergraduate dental students.

Level of Study: Graduate

Last four terms offered: 2009 Fall Term, 2007 Fall Term, 2006 Fall Term, 2005 Fall Term

Schedule of Classes (<https://bulletin.marquette.edu/class-search/?details&code=BIMA%206980>)

BIMA 6995 Independent Study in Dental Biomaterials (1-3 credits)

Faculty-supervised, independent study/research of a specific area or topic in Dental Biomaterials.

Prerequisite: Cons. of instr.

Level of Study: Graduate

Last four terms offered: 2015 Spring Term, 2012 Summer Term, 2008 Spring Term, 2007 Fall Term

Schedule of Classes (<https://bulletin.marquette.edu/class-search/?details&code=BIMA%206995>)

BIMA 6999 Master's Thesis (1-6 credits)

Credit hours assigned to thesis preparation and scholarship. S/U grade assessment.

Level of Study: Graduate

Last four terms offered: 2023 Spring Term, 2022 Spring Term, 2021 Fall Term, 2021 Spring Term

Schedule of Classes (<https://bulletin.marquette.edu/class-search/?details&code=BIMA%206999>)

BIMA 9970 Graduate Standing Continuation: Less than Half-Time (0 credits)

Fee. SNC/UNC grade assessment. Designated as less than half-time status only, cannot be used in conjunction with other courses, and does not qualify students for financial aid or loan deferment.

Prerequisite: Cons. of dept. ch.

Level of Study: Graduate

Last four terms offered: 2012 Spring Term, 2009 Fall Term, 2008 Spring Term, 2007 Fall Term

Schedule of Classes (<https://bulletin.marquette.edu/class-search/?details&code=BIMA%209970>)

BIMA 9994 Master's Thesis Continuation: Less than Half-Time (0 credits)

Fee. SNC/UNC grade assessment. Allows a student to be considered the equivalent of less than half-time status. Requires that the student is working less than 12 hours per week on their master's thesis. All six thesis credits required for the degree should be completed before registering for non-credit Master's Thesis Continuation.

Prerequisite: Cons. of dept. ch.

Level of Study: Graduate

Last four terms offered: 2023 Spring Term, 2022 Fall Term, 2021 Spring Term, 2020 Fall Term

Schedule of Classes (<https://bulletin.marquette.edu/class-search/?details&code=BIMA%209994>)

BIMA 9995 Master's Thesis Continuation: Half-Time (0 credits)

Fee. SNC/UNC grade assessment. Allows a student to be considered the equivalent of half-time status. Requires that the student is working more than 12 to less than 20 hours per week on their master's thesis. All six thesis credits required for the degree should be completed before registering for non-credit Master's Thesis Continuation.

Prerequisite: Cons. of dept. ch.

Level of Study: Graduate

Last four terms offered: 2014 Spring Term, 2012 Spring Term, 2009 Fall Term, 2009 Summer Term

Schedule of Classes (<https://bulletin.marquette.edu/class-search/?details&code=BIMA%209995>)

BIMA 9996 Master's Thesis Continuation: Full-Time (0 credits)

Fee. SNC/UNC grade assessment. Allows a student to be considered the equivalent of full-time status. Requires that the student is working 20 hours or more per week on their master's thesis. All six thesis credits required for the degree should be completed before registering for non-credit Master's Thesis Continuation.

Prerequisite: Cons. of dept. ch.

Level of Study: Graduate

Last four terms offered: 2022 Fall Term, 2022 Summer Term, 2022 Spring Term, 2021 Fall Term

Schedule of Classes (<https://bulletin.marquette.edu/class-search/?details&code=BIMA%209996>)