The fundamentals of dental materials science will be presented as it applies to clinical and laboratory dental applications. The physical properties and the rationale for material selection as dictated by intended use will be presented. An orientation to dental anatomy will be reviewed to create the basis for applying restorative materials to tooth form and function.
MOB 512. Head and Neck Anatomy/Teaching Techniques. 3 credits.  
Basic instruction in the Gross Anatomy of the Head and Neck. Special emphasis is placed on the clinical application of the anatomy to the various dental disciplines. Such topics include the anatomy and pathology of the TMJ and the distribution of the trigeminal and facial nerves with associated applied anatomy. This course is taught by lecture, laboratory dissection, models, radiographic images (x-rays, MRIs, and CTs), and various multimedia resources. Students are expected to meet with the instructors to complete additional requirements in current clinically relevant topics.

MOB 513. Oral Histology and Embryology. 3 credits.  
Microscopic and developmental anatomy of the normal cells, tissues, and organs of the oral cavity with stress on teeth and related tissues. Emphasis will be given to the growth and development of the head and neck. Students are expected to meet with the instructors to complete additional requirements in current clinically relevant topics.

MOB 514. Introduction to Biostatistics and Its Applications. 2 credits.  
Organizing and summarizing; elementary probability; sampling distributions, confidence intervals; hypothesis testing using parametric and non-parametric methods; sample size and power; regression and correlation; analysis of variance; experimental design principles and analysis.

MOB 515. Special Problems Oral Biology II. 1 credit.  
Topics of interest to the student, literature review, development of research protocol.

MOB 600. Teaching Practicum in Dental Materials. 2 credits.  
By assisting in the laboratory classroom teachers and working with students one-on-one in small groups, students will gain knowledge and skills to be successful in teaching Dental Materials. The practicums are an opportunity to place into practice theories and approaches explored during first year coursework. Instructional methods and teaching aids for the teaching of biomaterials science to dental students dental hygiene students and Oral Biology graduate students.

MOB 601. Mechanical Behavior of Materials. 2 credits.  
Principals of mechanical damage in materials, elastic and plastic deformation, creep strength fracture and fatigue hardness and wear resistance mechanical test methods and failure analysis.

MOB 602. Special Problems Dental Materials III. 1 credit.  
Topics of interest to the student, literature review.

MOB 603. Research for the Master’s Thesis. 3 credits.  
This course can be repeated to a maximum of six credits.

MOB 604. Teaching Practicum in Dental Materials. 2 credits.  
By assisting in the laboratory classroom teachers and working with students one-on-one in small groups, students will gain knowledge and skills to be successful in teaching Dental Materials. The practicums are an opportunity to place into practice theories and approaches explored during first year coursework.

MOB 605. Advanced Biomaterials Science. 2 credits.  
Properties and applications of ceramics and glasses in dentistry. Ceramics for inlays onlays and veneers, crowns and denture teeth, core ceramics metal ceramics, ceramics for implants machinable ceramics, hydroxyapatite.

MOB 606. Special Problems in Dental Materials IV. 1 credit.  
Topics of interest to the student, literature review.