



**Jordan University of Science and Technology**  
**Faculty of Applied Medical Sciences**  
**Dental Technology Department**

TDEN354 Maxillofacial Prosthodontics (2) - JNQF Level: 7

Second Semester 2023-2024

**Course Catalog**

1 Credit Hours. This is an undergraduate third year course. It is designed to provide the students with overall information about facial prosthetics. This course outline provides a structured framework for a comprehensive facial prosthetics program, covering theoretical knowledge, practical skills, and clinical applications. /Extra-oral maxillofacial prosthodontics / Artificial replacement of missing head and neck structures. / Materials and methods followed in maxillofacial prosthetics./ 3D printing of MaxFac prosthetics.

**Teaching Method:** Blended

**Text Book**

<b>Title</b>	Clinical Maxillofacial Prosthetics Hardcover
<b>Author(s)</b>	Thomas D. Taylor (Editor)
<b>Edition</b>	2nd Edition
<b>Short Name</b>	Reference 5
<b>Other Information</b>	In-depth review of prosthodontic procedures as they are applied in the maxillofacial situation. Reference emphasizes the procedures while minimizing surgical/medical considerations found in other texts. Approaches are based on principles and techniques rather than case reports. High-quality illustrations. DNLM: Maxillofacial Prosthesis.

**Course References**

Short name	Book name	Author(s)	Edition	Other Information
Reference 1	The art of clinical anaplastology	Keith Thomas	1st Edition	
Reference 2	Clinical Applications of Digital Dental Technology	Radi Masri, Carl F. Drisco	2nd Edition	Chapter 15: Digital technologies in maxillofacial prosthetics

Reference 3	3D Printing in Medicine and Surgery Applications in Healthcare	Daniel J. Thomas and Deepti Singh	1st Edition	3D Printing in Medicine and Surgery: Applications in Healthcare is an advanced book on surgical and enhanced medical applications that can be achieved with 3D printing. It is an essential handbook for medical practitioners, giving access to a range of practical methods, while also focusing on applied knowledge. This comprehensive resource features practical experiments and processes for preparing 3D printable materials. Early chapters cover foundational knowledge and background reading, while later chapters discuss and review the current technologies used to engineer specific tissue types, experiments and methods, medical approaches and the challenges that lie ahead for future research. The book is an indispensable reference guide to the various methods used by current medical practitioners working at the forefront of 3D printing applications in medicine.
Reference 4	Craniofacial prostheses: Anaplastology and Osseointegration	Per-Ingvar Branemark (Editor), Marcelo Ferraz De Oliveira (Editor)	1st Edition	Anaplastology provides prosthetic substitutes for lost anatomy; osseointegration makes it possible to stabilize prostheses in a reliable and predictable manner. Emphasizing the interdisciplinary, the book is composed of two parts. In Part I, patient presentations of auricular, nasal, orbital, and complex defects illustrate the art of prosthetic reconstruction. In Part II, various specialists share their experience and advice on how to optimize treatment planning and results using osseointegration to anchor prostheses.
Reference 6	Osseointegration in Craniofacial Reconstruction	Per-Ingvar Branemark (Editor), Dan E. Tolman (Editor)	1st Edition	Comprises 27 contributions divided into sections on soft and hard tissue defects: fundamentals, pretreatment evaluation, surgical consideration, prosthetic considerations, and post-treatment considerations. Representative topics include international perspectives on treatment outcomes, tissue-integration reconstruction of orbital defects, prostheses for complex defects, follow-up management, and bone-anchored hearing aids. Concludes with a section addressing the hearing impaired. Includes many color and b&w photographs detailing the pre- and post-operative appearances of patients.
Reference 7	Polymeric Materials for Biomedical Implants	Editors: Sabu Thomas, Abhimanyu Tharayil	1st Edition	Chapter 12: Polymers in maxillofacial prosthodontics by Dr. Muhanad Hatamleh

Instructor	
Name	<b>Dr. Muhanad Hatamleh</b>
Office Location	-
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Class Schedule & Room
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Section 1:  
Lecture Time: Mon : 10:30 - 11:30  
Room: M4202

Section 2:  
Lecture Time: Mon : 13:30 - 14:30  
Room: N1302

### Prerequisites

Line Number	Course Name	Prerequisite Type
513510	TDEN351 Maxillofacial Prosthodontics (1)	Prerequisite / Study

### Tentative List of Topics Covered

Weeks	Topic	References
Week 1	Introduction and General Overview: Introduction to facial prosthetics: definition, scope, and significance. / Overview of the course objectives, structure, and expectations/ Importance of interdisciplinary collaboration in maxillofacial prosthetics	<b>Chapter 1</b> From <b>Reference 5</b>
Week 2	Maxillofacial Prosthetics- History: Evolution of maxillofacial prosthetics: historical milestones and key developments / Contributions of pioneers in the field of facial prosthetics Impact of technological advancements on the practice of maxillofacial prosthetics	From <b>Reference 1</b> , From <b>Reference 4</b>
Week 3	Maxillofacial Prosthetics-Etiology: Understanding the etiology of facial defects and deformities / Common causes of facial disfigurement: trauma, congenital anomalies, oncologic resections, etc. / Discussion on the implications of etiology on treatment planning and prosthetic rehabilitation	From <b>Reference 5</b> , From <b>Reference 1</b>
Weeks 4, 5	Maxillofacial Prosthetics- Retention: Importance of retention in the success of facial prostheses / Principles of retention: mechanical, anatomical, and physiological factors / Techniques for achieving optimal retention in different types of facial prostheses	From <b>Reference 1</b> , From <b>Reference 4</b> , From <b>Reference 6</b>
Week 6	Maxillofacial Prosthetics- Patient Candidacy: Criteria for patient selection and assessment for maxillofacial prosthetic treatment Evaluation of patient suitability based on medical, psychological, and anatomical factors / Discussion on managing patient expectations and goals of treatment	From <b>Reference 5</b> , From <b>Reference 4</b>
Week 7	Maxillofacial Prosthetics- Patient Psychology and Benefits: Understanding the psychosocial impact of facial disfigurement on patients / Role of facial prosthetics in restoring aesthetics, function, and quality of life / Strategies for addressing patient concerns, building trust, and providing psychosocial support	From <b>Reference 5</b> , From <b>Reference 1</b>
Week 8	Maxillofacial Prosthetics- Problems and Longevity: Common challenges and complications associated with facial prosthetic rehabilitation / Strategies for troubleshooting prosthetic problems and addressing patient concerns / Long-term maintenance and follow-up care for maximizing prosthetic longevity	From <b>Reference 1</b>

Weeks 9, 10	Maxillofacial Prosthetics- Materials: Overview of materials used in maxillofacial prosthetics: silicones, acrylics, polymers, etc. / Properties and characteristics of prosthetic materials: strength, flexibility, biocompatibility, etc. / Considerations for material selection based on patient-specific factors and prosthetic requirements	<b>Chapter 12: Polymers in maxillofacial prosthodontics</b> From <b>Reference 7</b>
Weeks 11, 12	Maxillofacial Prosthetics- Construction and 3D Integration: Step-by-step process of facial prosthetic construction: impression, sculpting, molding, and finishing / Integration of digital technologies in facial prosthetics: CAD/CAM techniques, 3D printing / Hands-on workshops for practicing prosthetic fabrication and digital design	From <b>Reference 2</b> , From <b>Reference 3</b>
Weeks 13, 14	Maxillofacial Prosthetics- Paper Analysis: Review and analysis of research papers and literature in maxillofacial prosthetics / Critical appraisal of studies on prosthetic materials, techniques, and clinical outcomes / Discussion on current trends, gaps in research, and future directions in the field	
Week 15	Review and Wrap-Up : Recap of key concepts and topics covered throughout the course / Final assessment: quizzes, assignments, or presentations to evaluate learning outcomes / Opportunities for reflection, feedback, and discussion on future learning and professional development	

<b>Mapping of Course Outcomes to Program Outcomes and NQF Outcomes</b>	<b>Course Outcome Weight (Out of 100%)</b>	<b>Assessment method</b>
Proficiency in Prosthetic Design and Fabrication Techniques: Students will develop proficiency in designing and fabricating various types of maxillofacial prostheses, including obturators, orbital prostheses, and facial prostheses, using advanced materials and fabrication techniques. (skill) [1PLO 1, 1PLO 2] [1L7S2]	25%	Midterm Exam
Comprehensive Understanding of Maxillofacial Anatomy: Students will gain a comprehensive understanding of the anatomy of the maxillofacial region, including bones, muscles, nerves, and blood vessels, to effectively assess and treat patients requiring maxillofacial prosthetics. (knowledge). [1PLO 3] [1L7K1]	25%	Midterm Exam, Final Exam
Management of Complications and Patient Care: Students will learn to anticipate and manage complications associated with maxillofacial prosthetic treatment, such as tissue irritation, prosthetic displacement, and psychological challenges, while providing compassionate and comprehensive care to patients throughout the treatment process. (competence) [1PLO 8] [1L7C2, 1L7C4]	25%	Midterm Exam, Assessment, Final Exam
Clinical Skills in Patient Evaluation and Treatment Planning: Students will acquire clinical skills in conducting thorough patient evaluations, formulating treatment plans, and communicating effectively with patients and interdisciplinary healthcare teams to optimize outcomes in maxillofacial prosthetic rehabilitation.(skill) [1PLO 6, 1PLO 8, 1PLO 10] [1L7S1, 1L7S3]	25%	Final Exam

<b>Relationship to Program Student Outcomes (Out of 100%)</b>									
PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PLO 6	PLO 7	PLO 8	PLO 9	PLO 10
12.5	12.5	25			8.33		33.33		8.33

Relationship to NQF Outcomes (Out of 100%)					
L7K1	L7S1	L7S2	L7S3	L7C2	L7C4
25	12.5	25	12.5	12.5	12.5

Evaluation	
Assessment Tool	Weight
Midterm Exam	40%
Assessment	10%
Final Exam	50%

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