

1	Course title	Fixed & Removable Prosthodontics-4
2	Course number	1304713
3	Credit hours (theory, practical)	4 hrs (1 theory, 3 practical)
	Contact hours (theory, practical)	2 hrs (theory)/2 weeks, 13 hrs (clinical)/week
4	Prerequisites/corequisites	Fixed & Removable Prosthodontics-1 (1302727)
5	Program title	MSc in Fixed & Removable Prosthodontics
6	Program code	
7	Awarding institution	The University of Jordan
8	Faculty	Faculty of Dentistry
9	Department	Department of Conservative Dentistry & Department of Removable Prosthodontics
10	Level of course	Masters
11	Year of study and semester (s)	Second year, Second semester
12	Final Qualification	MSc
13	Other department (s) involved in teaching the course	Department of Conservative Dentistry & Department of Removable Prosthodontics
14	Language of Instruction	English
15	Date of production/revision	January 2019

#### 16. Course Coordinator:

Office numbers, office hours, phone numbers, and email addresses should be listed.

**Dr Susan Hattar**, office hours: Mon. 12-1, Tue: 12-1, Ext 23552, E-mail: [s.hattar@ju.edu.jo](mailto:s.hattar@ju.edu.jo)

#### 17. Other instructors:

Office numbers, office hours, phone numbers, and email addresses should be listed.

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## 18. Course Description:

*As stated in the approved study plan.*

This course is composed of the advanced knowledge in the methods of diagnosis and the methods of devising treatment plans appropriate for fixed and removable prosthetic cases in its complete and partial divisions in addition to cases that will transfer from a treatment with a partial to full prosthesis. This course will define the theoretical frame for the clinical and laboratory treatment methods and the clinical training related to diagnosis and treatment of cases requiring various types of prosthetic treatment.

## 19. Course aims and outcomes:

### A- Aims:

- 1) Ensure that the students are up to date with latest developments related to fixed and removable prosthodontics and capable of performing more complex operative and prosthodontic tasks.
- 2) The practical components aim at having the student capable of evaluating his/her gained skills, and develop new diagnostic and clinical skills related to fixed and removable prosthodontics, including laboratory procedures.

### B- Intended Learning Outcomes (ILOs):

- 3) Show a high degree of skill in treatment of patients requiring complex fixed and removable prosthetic work
- 4) Treat cases requiring immediate dental prosthesis or overdentures, taking into consideration mechanical, biological, aesthetic and functional considerations.
- 5) Reproduce jaw relationships both centric and eccentric, mount them in correct relationship on semi adjustable articulators, design occlusal scheme according to patients needs
- 6) Perform full arch diagnostic wax up, apply occlusal concepts in equilibration.
- 7) Fabricate provisional restorations by making use of diagnostic wax up and modification of these provisionals intra-orally to meet patients' aesthetic and functional requirements
- 8) Apply occlusal concepts of conformational and reorganized approaches when treating patients, while applying knowledge of mandibular movements and determinants.
- 9) Establish proper design for removable prosthesis based on literature and scientific evidence.
- 10) Discuss and elaborate on Biomimetic procedures in dentistry, apply this approach in operative and implant disciplines.
- 11) Treat patients requiring combined fixed and removable prosthesis through a variety of treatment modalities such as attachments, telescopic crowns and other.
- 12) Manage difficult cases of edentulism and provide them with functional and esthetic prosthesis, especially cases of edentulism opposed by natural dentition
- 13) Manage cases where full mouth rehabilitation is indicated, starting from proper examination, through treatment planning and ending with functional and esthetic outcome.
- 14) Understand the concept of CAD/CAM in dentistry, realize the benefits and shortcoming of this technology. Recognize the various disciplines in which it is applied.
- 15) Place implants after proper examination and treatment planning. Use radiological and surgical guides.
- 16) Communicate well with patient in a professional ethical manner, ability to explain and discuss treatment plan and path.
- 17) Present clinical cases in a didactic manner and defend the treatment modality and progress of the case.
- 18) Design a portfolio that represents the students work at the end of the semester

**20. Topic Outline and Schedule:**

Seminar No.	Topic	Supervisor	Achieved ILOs	Evaluation Method	Reference
1 (week 2)	CAD/CAM in restorative work <ul style="list-style-type: none"> <li>- An overview of dental CAD/CAM</li> <li>- Advantages of CAD/CAM</li> <li>- Components and milling variances</li> <li>- CAD/CAM production concepts in dentistry</li> <li>- Materials of CAD/CAM</li> <li>- Common CAD/CAM systems</li> <li>- Clinical performance</li> <li>- CAD/CAM and implant dentistry</li> </ul>	Dr Ereifig	14	22	25 (A&B)
2 (week 4)	Full mouth Rehabilitation	Prof Khraisat	13	22	25 (A&B)
3 (week 6)	Biomimetic approach <ul style="list-style-type: none"> <li>- Introduction</li> <li>- Restorative aspects in biomimetic approach <ul style="list-style-type: none"> <li>a. The biomimetic principles in restorative dentistry</li> <li>b. Biomaterials</li> <li>c. Biomimetic in dental implants</li> </ul> </li> <li>- Regenerative aspects in biomimetic approach <ul style="list-style-type: none"> <li>a. Regenerative pulp tissue</li> <li>b. Bioengineered tooth</li> <li>c. Biomimetic mineralization</li> </ul> </li> </ul> Development of artificial salivary glands	Dr Hattar	10	22	25 (A&B)
4 (week 8)	Dynamics of Mandibular movement <ul style="list-style-type: none"> <li>- Cranio-mandibular biomechanics</li> <li>- Mandibular movement in relation to the frontal plane</li> <li>- Mandibular movement in relation to the sagittal plane</li> <li>- Mandibular movement in relation to the horizontal plane</li> <li>- Posselt's envelope of motion</li> <li>- Determination of mandibular movements <ul style="list-style-type: none"> <li>➤ Condylar guidance</li> <li>➤ Anterior guidance</li> </ul> </li> </ul> Technical considerations	Prof Wala Amin	8	22	25 (A&B)
5	Occlusal Concepts	Prof Wala	5, 6, 8	22	25 (A&B)

(week 10)	<ul style="list-style-type: none"> <li>- Features of natural occlusion</li> <li>- Artificial occlusions <ul style="list-style-type: none"> <li>➤ Centric occlusion</li> <li>➤ Maximum intercuspation</li> <li>➤ Centric relation</li> <li>➤ Terminal hinge axis</li> </ul> </li> <li>- Articulation <ul style="list-style-type: none"> <li>• Balanced articulation</li> <li>• Mutually-protected articulation</li> <li>• Anteriorly-protected articulation</li> <li>• Lingualized articulation</li> <li>• Canine-protected articulation</li> </ul> </li> <li>- Occlusal concepts for patients with implants <ul style="list-style-type: none"> <li>• Overdenture design</li> <li>• Influence of implant location on choice of occlusal concept</li> </ul> </li> </ul> <p>Technical considerations</p>	Amin			
6 (week 12)	<p>Occlusal check records and principles of maxilla-mandibular relationships</p> <ul style="list-style-type: none"> <li>- Orientation and centric relation records</li> <li>- Importance of semi-adjustable articulators in registering maxilla-mandibular relationships</li> <li>- Horizontal angle (condylar inclination)</li> <li>- Lateral angle (Bennett lateral translation angle)</li> <li>- Inter-condylar distance</li> <li>- Adjustment of semi-adjustable articulator</li> <li>- Vertical dimension of occlusion and of rest</li> <li>- Vertical occlusion</li> <li>- Registering maxilla-mandibular relationship for complete denture patients by using the neutral-zone principle</li> <li>- Occlusal registration for edentulous patients treated with implants</li> <li>- Altered cast impression and occlusal registration in one visit</li> <li>- Accuracy of occlusal records</li> <li>- Creating vertical stop as an aid for inter-occlusal records</li> <li>- Inter-occlusal record without the use of record bases.</li> <li>- Variations of the nature of opposition</li> </ul> <p>Technical considerations for all occlusal record</p>	Prof Wala Amin	5, 6, 8	22	25 (A&B)

	procedures				
7 (week 14)	<p>Complete denture opposing fully dentate or partially edentulous and restored with removable partial denture</p> <ul style="list-style-type: none"> <li>- Causes and consequences of irregular occlusal plane</li> <li>- Causes and consequences of discrepancy in tooth dimensions</li> <li>- Causes and consequences of discrepancy in tooth strength</li> <li>▪ Management of irregular occlusal plane: <ul style="list-style-type: none"> <li>▪ Enameloplasty</li> <li>▪ Overlay prostheses</li> <li>▪ Fixed prostheses</li> </ul> </li> <li>▪ Management of the discrepancy in tooth dimensions</li> <li>▪ Management of the discrepancy in tooth strength</li> <li>▪ Management of the discrepancy in base strength</li> </ul> <p>❖ Changes occurring when the complete denture was opposed by a bilateral distal-extension removable partial denture:</p> <ul style="list-style-type: none"> <li>➤ Bone loss at maxillary anterior ridge</li> <li>➤ Over eruption of mandibular anterior teeth</li> <li>➤ Discrepancy of the occlusal plane</li> <li>➤ Loss of the occlusal vertical dimension</li> <li>- Retrograde periodontitis at the lower anterior teeth</li> </ul>	Prof Wala Amin	12	22	25 (A&B)

## 21. Teaching Methods and Assignments:

Development of ILOs is promoted through the following teaching and learning methods:

- **Clinical Sessions**

Each clinic duration is 3 hours, 3 times a week. Students are asked to bring their patients and perform full examination and documentation of each case. Followed by a discussion of the comprehensive treatment plan with the instructors. After getting the approval for the clinical case, the student may start the clinical work that is continuously monitored and supervised by the instructor all through the semester.

- **Seminar Sessions**

Seminars will be lead by the faculty members listed in the course outline.

Every other week a seminar of 2 hours is given to the students corresponding the designated topic. Faculty members will distribute a number of "Key Scientific Articles" at least one week before the scheduled date of the seminar.

Each student will be responsible for reading and understanding all articles.

The seminar consists of a brief introduction of the subject (instructor), followed by a discussion of the most recent literature review.

Each student will be responsible for presenting one or two of the key articles during the seminar (10 – 15 min) and provide a typed and printed handout to everyone attending the seminar.

The seminar ends with an interactive discussion and exchange of ideas between students and staff members

## 22. Evaluation Methods and Course Requirements:

### **Requirements:**

1. Students must accomplish by the end of the semester the following **MINIMUM** clinical requirements:
2. Treatment of a patient with at least 8 units of crown/bridge work
3. Treatment of patient with combined, fixed (at least 4 preparations) and Co-Cr RPD.
4. Aesthetic treatment involving at least 4-6 anterior all ceramic crowns
5. 4 arches (2 upper and 2 lower) complete OR immediate OR copy dentures
6. An overdenture retained by implants/teeth (with metal coping or precision attachment)
7. A Comprehensive Treatment planning and insertion of 1-3 implants (surgical treatment should be under the supervision of the oral surgery consultants / oral surgery)

### **IMPORTANT:**

- All patients must be approved by the faculty of the graduate program.
- All postgraduates MUST abide by cross infection control measures and regulations. .
- All students MUST submit a portfolio containing the following:
  - Digital records of all their clinical cases including photographs
  - A table containing all the clinical requirements performed.
  - Seminars prepared
  - Any publications, audits, abstracts presented by the student during the semester

### **Evaluation:**

- 40% of the mark is attributed to written exams (15% mid-term and 25% final)
- 60 % of the mark is attributed to the students clinical work (requirements)

## 23. Course Policies:

### **A- Attendance policies:**

Seminar and clinic attendance is mandatory. However, 15% allowed absence is granted for students by the university law.

### **B- Absences from exams and handing in assignments on time:**

A make up exam is allowed in cases where the students misses the exam due to an acceptable excuse, and the excuse is submitted in due time according to the university regulations.

**C- Health and safety procedures:**

All patients must be approved by the faculty of the graduate program.

All postgraduates MUST abide by cross infection control measures and regulations.

**D- Honesty policy regarding cheating, plagiarism, misbehavior:**

We follow the rules and regulations set by the University of Jordan.

**E- Grading policy:**

*Student overall grade will be comprised of:*

- 15% midterm written exam
- 25% final written exam
- 15% case presentation
- 45% continuous clinical assessment

**F- Available university services that support achievement in the course:****24. Required equipment:**

Students are required to have:

- 1) **Semiadjustable articulator**
- 2) **Macrolens camera, intra-oral mirrors and retractors.**
- 3) **Laptop**
- 4) **Dental loops (optional)**

**25. References:****A. Required book (s), assigned reading and audio-visuals:**

- 1) Contemporary Fixed Prosthodontics; by Rosenstiel FS, Land MF, Fujimoto J. 4<sup>th</sup> Edition. St Louis: Mosby.
- 2) Fundamentals of Fixed Prosthodontics; by Shillingburg HT, Hobo S, Whitset LD.. Quintessence, Chicago
- 3) Sturdevant's Art and Science of Operative Dentistry; by Sturdevant, C. M., Barton, R. E., Sockwell, C. L., Strickland, W. D. The C. V. Mosby Co. St. Louis.
- 4) Cohen's Pathways of the pulp; by Cohen, S., and Berman, R. C. 11<sup>th</sup> Edition 2015. Mosby Co. St.Louis.
- 5) McCracken's Removable Partial Prosthodontics; by Carr A, Brown D. 12<sup>th</sup> Edition 2010.

**B- Key Scientific articles and the most updated literature articles are given for each seminar (The topics covered in the seminars constitutes the main exam material)**

**26. Additional information:**

PG students must prepare the following documentation during the course of their study and clinical training:

- A cumulative logbook outlining all treatment provided to patients as well as a copy of the patient file
- All treatment plans should be co-signed by two supervisors BEFORE any treatment is started and registered at the academic coordinator. Any treatment carried out before a treatment plan is signed will not be counted towards requirements.
- PG students should make sure that their clinical cases are supervised by attending faculty members.
- A portfolio folder containing documentation of all clinical cases including clinical photographs and relevant radiographs as a brief PowerPoint presentations.

Name of Course Coordinator: **DR Susan Hattar**-Signature: ----- Date: -----

Head of curriculum committee/Department: -----Signature: -----

Head of Department: - ----- - Signature: -----

Head of curriculum committee/Faculty: ----- Signature: -----

Dean: ----- -Signature: -----

Copy to:

Head of Department  
Assistant Dean for Quality Assurance  
Course File