Republic of Yemen

21 September University Of Medical & Applied Sciences

FACULTY OF DENTISTRY

Bachelor of Dental Technology (B.D.T)

Program Specification

Department of Prosthodontics.

Course Specification of

Fixed Prosthodontics - 2

Course Code. (09.22.924)

2025- 2024.

I. General Information:

1.	Course Title:	Fixed Prosthodontics – 2				
2.	Course Code:	09.22.924				
3.	Credit Hours:	Credit Hours	Theory Contact Hours		Practical Contact Hours	
			Lecture	Tutorial/ Seminar	Lab	Clinical
		3	2	--	2	--
4.	Level/ Semester at which this Course is offered:	2nd Level / 2nd Semester				
5.	Pre –Requisite (if any):	Fixed Prosthodontics – 1				
6.	Co –Requisite (if any):	------				
7.	Program (s) in which the Course is Offered:	Bachelor of Dental Technology (B.D.T)				
8.	Language of Teaching the Course:	English				
9.	Location of Teaching the Course:	Faculty of Dentistry				
10.	Prepared by:	*Dr. Mohsen Ali Al-Hamzi*				
11	Date and Number of Approval by Council:					

II. Course Description:

This course of second semesters represents an introduction to the science and art of Fixed Prosthodontics (FP), continue, focusing on the laboratory application of basic FP preparation and laboratory procedures on bridge dental lab. It is an essential prerequisite to other laboratory courses. Its theoretical part covers basic topics including types of bridges, pouring impression, working cast and dies, wax pattern materials and techniques, investing materials and techniques, casting materials and techniques, try in, finishing, insertion of the final restoration cements materials and techniques. This is done through lectures, laboratory demonstrations and application. The assessment includes written and practical exams.

III. Course Intended Learning Outcomes (CILOs) : Upon successful completion of the course, students will be able to:		Referenced PILOs		
A. Knowledge and Understanding:		**I, P or M/A**		
a1	Identify the technical, laboratory and specific investigatory procedures practiced in dental Technology in relation to Fixed Prosthodontics	**I, P**	**A4**	Describe the different technical, laboratory and special investigatory procedures practiced in dental Technology.
a2	Describe an understanding of the psychological, cultural and social factors that have implications on dental Technology, that related to Fixed Prosthodontics practice.	**I, P**	**A5**	Show an understanding of the psychological, cultural and social factors that have implications on dental Technology.
			A3	
B. Intellectual Skills:				
b1	Justify simple prosthesis from the design, and treatment plans, that related to FP with the Dentist, laboratory procedures and demonstrate problem-solving skills to find solutions for unanticipated problems.	**I, P**	**B2**	Evaluation of critical thinking and evidence-based problem solving when providing service.
b2	Select suitable biocompatible dental materials and choose the best quality material to be used in a specific dental Technology situation that will be used in FP practice.	**I, P**	**B5**	Select suitable biocompatible dental materials and choose the best quality material to be used in a specific dental Technology situation.
C. Professional and Practical Skills:				
c1	Manage the dental technology equipment and materials with high quality standard of safety in Fixed Prosthodontics Practice.	**I, P**	**C2**	Manage the dental technology equipment with high quality standard of safety.

c2	Ability to assess the risk of laboratory emergencies and be competent in their management within the dental technology practice setup, in comprehensive fixed prosthodontics practices.	**I, P**	**C6**	Ability to assess the risk of medical emergencies and be competent in their management within the dental practice setup.
	D. Transferable Skills:			
d1	Commit to continuous education, self-development and lifelong learning to remain updated with advances in the Fixed prosthodontics practice	**I, P**	**D3**	Work individually and in team and develop lifelong learning using up to date technology that help in understanding the diseases and its control and prevention.
d2	Communicate effectively with the supervisor and colleagues and other team member in Dental Lab of Fixed Prosthodontics.	**I, P**	**D7**	Respect the different cultural beliefs, ethics, personalities, privacy and values for patients and community with a good behavior and follow the institutional and national roles of technical practice.
I= Introduced, P=Practiced or M/A= Mastered/Advanced				

(A) Alignment of Course Intended Learning Outcomes (Knowledge and Understanding) to Teaching Strategies and Assessment Methods:			
Course Intended Learning Outcomes		**Teaching Strategies**	**Assessment Strategies**
a1	Identify the technical, laboratory and specific investigatory procedures practiced in dental Technology in relation to Fixed Prosthodontics	▪ Interactive lectures ▪ Discussion ▪ Self-learning	▪ Written exam (mid and final terms and quizzes), ▪ Final oral exam ▪ Homework
a2	Describe an understanding of the psychological, cultural and social factors that have implications on dental Technology, that related to Fixed Prosthodontics practice.	▪ Interactive lectures ▪ Discussion ▪ Self-learning ▪	▪ Written exam (mid and final terms and quizzes), ▪ Final oral exam ▪ Homework
		▪	▪

(B) Alignment of Course Intended Learning Outcomes (Intellectual Skills) to Teaching Strategies and Assessment Methods:			
Course Intended Learning Outcomes		**Teaching Strategies**	**Assessment Strategies**
b1	Justify simple prosthesis from the design, and treatment plans, that related to FP with the Dentist, laboratory procedures and demonstrate problem-solving skills to find solutions for unanticipated problems.	▪ Interactive lectures ▪ Self-learning ▪ Problem Based Learning (PBL) ▪ Training	-Written Exam -Final Oral Exam ▪ -Final Practical Exam
b2	Select suitable biocompatible dental materials and choose the best quality material to be used in a specific dental Technology situation that will be used in FP practice.	▪ Interactive lectures ▪ Self-learning ▪ Problem Based Learning (PBL) ▪ Training	-Written Exam -Final Oral Exam -Final Practical Exam
		▪	▪

(C) Alignment of Course Intended Learning Outcomes (Professional and Practical Skills) to Teaching Strategies and Assessment Methods:			
Course Intended Learning Outcomes		**Teaching Strategies**	**Assessment Strategies**
c1	Manage the dental technology equipment and materials with high quality standard of safety in Fixed Prosthodontics Practice.	-Practical session. -Training -Case Study (CBL) - PBL	- Final Practical Exam - OSCE -OSPE
c2	Ability to assess the risk of laboratory emergencies and be competent in their management within the dental technology practice setup, in comprehensive fixed prosthodontics practices.	-Practical session. -Training -Case Study (CBL) - PBL	- Final Practical Exam - OSCE -OSPE
		▪	▪

(D) Alignment of Course Intended Learning Outcomes (Transferable Skills) to Teaching Strategies and Assessment Methods:

Course Intended Learning Outcomes		Teaching Strategies	Assessment Strategies
d1	Commit to continuous education, self-development and lifelong learning to remain updated with advances in the Fixed prosthodontics practice	- Seminars - Discussion - Case Study (CBL) - Self Learning - Presentation - PBL	- Homework - Research
d2	Communicate effectively with the supervisor and colleagues and other team member in Dental Lab of Fixed Prosthodontics.	- Seminars - Discussion - Case Study (CBL) - Self Learning - Presentation	- Homework - Research
	…	▪	▪

IV. Course Contents:

A. Theoretical Aspect:

No.	Units/Topics List	Sub Topics List	Number of Weeks	Contact Hours	Learning Outcomes (CILOs)
1	Introduction to Course	– Review of the first term and study plan of the second term	1	2	a.1, a.2
2	Wax Pattern	– The indirect technique, the direct technique, requirements of inlay wax pattern fabrication, Waxing Procedures, Coping Fabrication, Axial Contour, Occlusal Morphology, Marginal Finishing	2	4	a.1, a.2
3	Investment materials and metal casting alloys, Investing, burn-out and casting	Dental casting alloys Sprue Former Attachment (Supruing) – Investing the wax pattern, Shrinkage compensation, Investing procedure, Burnout (wax elimination), Casting, Finishing of metal restoration	2	4	a.1, a.2, b.1, b.2
4	Preliminary finishing and Try – in the Final Restoration and	Evaluation of the restoration, Internal surfaces, Proximal contacts, Margins "completeness of seating", Stability, Occlusion, Contours, ...	2	4	a.1, a.2, b.1, b.2, c.2,

No.	Units/Topics List	Sub Topics List	Number of Weeks	Contact Hours	Learning Outcomes (CILOs)
	Casting problems	– The different mistakes that may lead to the final restoration failures			
5	Mid-term Exam		1	2	a1, a2,b1 b2, c1, c2, d.1, d2
6	Final finishing and polishing and luting materials	– Types of dental cement, Zinc phosphate cement , Zinc polycarpoxylate cement, Zinc oxide-eugenol, Glass ionomer cement, Silicophosphate cement, Resin luting agents.	1	2	
7	Bridge Types and Design	– Bridge classification, Basic Designs, Fixed – Fixed Bridge, Fixed – movable Bridge, Simple cantilever Bridge, Spring cantilever Bridge, Combinations,	1	2	a1, a2,b1 b2, c1, c2, d.1, d2
8	Types of Bridges Continue	Variations, Removable Bridge, non – Preparation Bridge or Resin – Bonded Bridge. Steps of Clinical and laboratory procedures of differint types of FPDs	2	4	a1, a2,b1 b2, c1, c2, d.1, d2
9	Components of Bridge	- Definitions, Abutments, Main, Secondary, Terminal, and Pier Abutments. Types of Retainers, Criteria for choosing a retainer, The requirements of retainers, Major or minor retainer. Types of Connectors.	1	2	a1, a2,b1 b2, c1, c2, d.1, d2
10	Components of Bridge	- Pontic classification, Requirements of Pontic, Pontic Tissue Relation, Size and Types of Pontic.	1	2	
11	Cooperative Learning	–	1	2	
12	**Final Exam**	–	1	2	a1, a2,b1 b2, c1, c2, d.1, d2
Number of Weeks /and Units Per Semester			**16**	**32**	

B - Practical Aspect: (if any)

Order	Tasks/ Experiments	Number of Weeks	contact hours	Learning Outcomes
1	Introduction to the 2nd Semester	1	2	**a2, b1, c1, d1**
2	Pouring impression of 3-unit Porcelain Fused to Metal (PFM) Fixed Partial Denture (FPD)	2	4	**a2, a3, b1, b2, c2, d1, d2**
3	Provisional Restoration of 3-unit FPD.	2	4	**a1, a2, b1, b2, c1, c2, d2**
4	Working cast and Die preparation Bit registration and articulation	2	4	**a1, a2, b1, b2, c1, c2, d1, d2**
5	Mid-term Practical Exam	1	2	
6	Waxing of PFM , FPD	2	4	**a1, a2, b1, b2, c1, c2, d1, d2**
7	Spruing, Investing & casting. & primary Finishing	2	4	**a1, a2, b1, b2, c1, c2, d1, d2**
8	PFM Build up 3-unit FPD	2	4	**a1, a2, b1, b2, c1, c2, d1, d2**
9	Complete all Requirements, Delivering and Assessment	1	2	**a1, a2, b1, b2, c1, c2, d1, d2**
10	Final Practical Exam.	1	2	
Number of Weeks /and Units Secnd Semester		**16**	**32**	

VII. Assignments:

No.	Assignments	Week Due	Mark	Aligned CILOs (symbols)
1	-Technical/Practical reports about the laboratory Procedures of Metal – Ceramic Restoration.	All Weeks	5	a1, b1,c1,c2, d1
2	-Presentations Types and Components of Bridges that related to Dental Technologist.	All Weeks	5	a1,a2,b1,b2, c1,d1
Total			**10**	

VIII. Schedule of Assessment Tasks for Students During the Semester:

No.	Assessment Method	Week Due	Mark	Proportion of Final Assessment	Aligned Course Learning Outcomes
1	**Mid-Term Theoretical Exam**	1-12	25	25 %	a.1, a.2, b.1, b.2,d.1, d.2
2	**Mid-Term Practical Exam**	6	15	15 %	a.1, a.2, b.1, b.2,d.1, d.2
3	**Final Practical Exam including Project Presentation & Evaluation**	14	20	20 %	a.1, a.2, b.1, b.2,d.1, d.2
4	**Final Theoretical Exam**	16	40	40 %	b.1, b.2, c.1, c.2, d.1, d.2
Total			**100**	**100 %**	

IX. Learning Resources:

- *Written in the following order:* Author, Year of publication, Title, Edition, Place of publication, Publisher.

1- Required Textbook(s) (maximum two):

1- Stephen F. Rosenstiel , Martin F. Land., 2015,: Contemporary of fixed prosthodontics. last edition, MOSBY Inc,

2- Shillingburg, H.T., Hobo, S., Whitsett, L.D.: Fundamentals of Fixed Prosthodontics, last edition. Quintessence Pub. Co.

2- Essential References

3- V Rangarajan (Author), T V Padmanabhan,2017: " Textbook of Prosthodontics ", 2nd edition Elsevier India.

4- Vijay Prakash , Ruchi Gupta ,2017:Concise Prosthodontics- E Book: Prep Manual for Undergraduates 2nd Edition, Elsevier India.

3- Electronic Materials and Web Sites etc.:

Websites:

- http://www. journalof prosthetic dentistry
- http://www. internationaljournalof prosthetic dentistry

X. Course Policies: (Based on the Uniform Students' By law (2007)

1	**Class Attendance:**

	Class Attendance is mandatory. A student is considered absent and shall be banned from taking the final exam if his/her absence exceeds 25% of total classes.
2	**Tardiness:** A student will be considered late if he/she is not in class after 10 minutes of the start time of class.
3	**Exam Attendance/Punctuality:** No student shall be allowed to the exam hall after 30 minutes of the start time, and shall not leave the hall before half of the exam time has passed.
4	**Assignments & Projects:** Assignments and projects must be submitted on time. Students who delay their assignments or projects shall lose the mark allocated for the same.
5	**Cheating:** Cheating is an act of fraud that results in the cancelation of the student's exam or assignment. If it takes place in a final exam, the penalties stipulated for in the Uniform Students' Bylaw (2007) shall apply.
6	**Forgery and Impersonation:** Forgery/Impersonation is an act of fraud that results in the cancelation of the student's exam, assignment or project. If it takes place in a final exam, the penalties stipulated for in the Uniform Students' Bylaw (2007) shall apply**.**
7	**Other policies:** The University official regulations in force will be strictly observed and students shall comply with all rules and regulations of the examination set by the Department, Faculty and University Administration.

Faculty of Dentistry

Department of Prosthodontics

Program of Dental Technology (B.D.T)

Course Plan (Syllabus) of Fixed Prosthodontics - 2

Course Code 09.22.924

I. Information about Faculty Member Responsible for the Course:								
Name of Faculty Member:	**FACULTY OF DENTISTRY**	**Office Hours**						
Location& Telephone No.:	-----							
E-mail:	--@--.--	SAT	SUN	MON	TUE	WED	THU	

2024 / 2025.

II. Course Identification and General Information:		
11.	**Course Title:**	**Fixed Prosthodontics – 2**

12.	**Course Code:**	09.22.924				
13.	**Credit Hours:**	**Credit Hours**	**Theory Contact Hours**		**Practical Contact Hours**	
			Lecture	**Tutorial/ Seminar**	**Lab**	**Clinical**
		3	2	--	2	--
14.	**Level/ Semester at which this Course is offered:**	2nd Level / 2nd Semester				
15.	**Pre –Requisite (if any):**	**Fixed Prosthodontics – 1**				
16.	**Co –Requisite (if any):**	------				
17.	**Program (s) in which the Course is Offered:**	Bachelor of Dental Technology (B.D.T)				
18.	**Language of Teaching the Course:**	English				
19.	**Location of Teaching the Course:**	Faculty of Dentistry				
20.	**Prepared by:**	***Dr. Mohsen Ali Al-Hamzi***				
11	**Date and Number of Approval by Council:**					

III. Course Description:

This course of second semesters represents an introduction to the science and art of Fixed Prosthodontics (FP), continue, focusing on the laboratory application of basic FP preparation and laboratory procedures on bridge dental lab. It is an essential prerequisite to other laboratory courses. Its theoretical part covers basic topics including types of bridges, pouring impression, working cast and dies, wax pattern materials and techniques, investing materials and techniques, casting materials and techniques, try in, finishing, insertion of the final restoration cements materials and techniques. This is done through lectures, laboratory demonstrations and application. The assessment includes written and practical exams.

IV. Course Intended Learning Outcomes (CILOs) :

Upon successful completion of the Course, student will be able to:

A. Knowledge and Understanding:

a1	Identify the technical, laboratory and specific investigatory procedures practiced in dental Technology in relation to Fixed Prosthodontics
a2	Describe an understanding of the psychological, cultural and social factors that have implications on dental Technology, that related to Fixed Prosthodontics practice.
	B. Intellectual Skills:
b1	Justify simple prosthesis from the design, and treatment plans, that related to FP with the Dentist, laboratory procedures and demonstrate problem-solving skills to find solutions for unanticipated problems.
b2	Select suitable biocompatible dental materials and choose the best quality material to be used in a specific dental Technology situation that will be used in FP practice.
	C. Professional and Practical Skills:
c1	Manage the dental technology equipment and materials with high quality standard of safety in Fixed Prosthodontics Practice.
c2	Ability to assess the risk of laboratory emergencies and be competent in their management within the dental technology practice setup, in comprehensive fixed prosthodontics practices.
	D. Transferable Skills:
d1	Commit to continuous education, self-development and lifelong learning to remain updated with advances in the Fixed prosthodontics practice
d2	Communicate effectively with the supervisor and colleagues and other team member in Dental Lab of Fixed Prosthodontics.

IV. Course Contents:

A. Theoretical Aspect:

No.	Units/Topics List	Sub Topics List	Number of Weeks	Contact Hours
1	Introduction to Course	– Review of the first term and study plan of the second term	1	2
2	Wax Pattern	– The indirect technique, the direct technique, requirements of inlay wax pattern fabrication, Waxing Procedures, Coping Fabrication, Axial Contour, Occlusal Morphology, Marginal Finishing	2	4
3	Investment materials and metal casting alloys, Investing, burn-out and casting	Dental casting alloys Sprue Former Attachment (Supruing) – Investing the wax pattern, Shrinkage compensation, Investing procedure, Burnout (wax elimination), Casting, Finishing of metal restoration	2	4
4	Preliminary finishing and Try – in the Final Restoration and Casting problems	Evaluation of the restoration, Internal surfaces, Proximal contacts, Margins "completeness of seating", Stability, Occlusion, Contours, ... – The different mistakes that may lead to the final restoration failures	2	4
5	Mid-term Exam		1	2
6	Final finishing and polishing and luting materials	– Types of dental cement, Zinc phosphate cement , Zinc polycarpoxylate cement, Zinc oxide-eugenol, Glass ionomer cement, Silicophosphate cement, Resin luting agents.	1	2
7	Bridge Types and Design	– Bridge classification, Basic Designs, Fixed – Fixed Bridge, Fixed – movable Bridge, Simple cantilever Bridge, Spring cantilever Bridge, Combinations,	1	2
8	Types of Bridges Continue	Variations, Removable Bridge, non – Preparation Bridge or Resin – Bonded Bridge. Steps of Clinical and laboratory procedures of differint types of FPDs	2	4
9	Components of Bridge	- Definitions, Abutments, Main, Secondary, Terminal, and Pier Abutments. Types of Retainers, Criteria for choosing a retainer, The requirements of retainers, Major or minor retainer. Types of Connectors.	1	2

No.	Units/Topics List	Sub Topics List	Number of Weeks	Contact Hours
10	Components of Bridge	- Pontic classification, Requirements of Pontic, Pontic Tissue Relation, Size and Types of Pontic.	1	2
11	Cooperative Learning	–	1	2
12	**Final Exam**	–	1	2
Number of Weeks /and Units Per Semester			**16**	**32**

B - Practical Aspect: (if any)

Order	Tasks/ Experiments	Number of Weeks	contact hours
1	Introduction to the 2nd Semester	1	2
2	Pouring impression of 3-unit Porcelain Fused to Metal (PFM) Fixed Partial Denture (FPD)	2	4
3	Full crown preparation for cast restoration, on lower first molar on study cast	2	4
4	Provisional Restoration of 3-unit FPD.	2	4
5	Working cast and Die preparation Bit registration and articulation	1	2
6	Mid-term Practical Exam	1	2
7	Waxing of PFM , FPD	2	4
8	Spruing, Investing & casting. & primary Finishing	2	4
9	PFM Build up 3-unit FPD	2	4
10	Final Practical Exam	1	2
Number of Weeks /and Units Secnd Semester		**16**	**32**

VI. Teaching Strategies of the Course:

- Interactive lectures
- Self-learning
- Problem Based Learning (PBL)
- Practical session.
- Training
- Case Study (CBL)
- PBL

VII. Assessment Methods of the Course:

- - Written exam (mid and final terms and quizzes).
- Final Oral Exam
- Final Practical Exam
- OSCE.
- OSPE.
- Homework.
- Research

VIII. Assignments:

No.	Assignments	Week Due	Mark
1	-Technical/Practical reports about the laboratory Procedures of Metal – Ceramic Restoration.	All Weeks	5
2	-Presentations Types and Components of Bridges that related to Dental Technologist.	All Weeks	5
Total			**10**

IX. Schedule of Assessment Tasks for Students During the Semester:

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1	**Mid-Term Theoretical Exam**	1-12	25	25 %

No.	Assessment Method	Week Due	Mark	Proportion of Final Assessment
2	**Mid-Term Practical Exam**	6	15	15 %
3	**Final Practical Exam including Project Presentation & Evaluation**	14	20	20 %
4	**Final Theoretical Exam**	16	40	40 %
Total			**100**	**100 %**

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