

Republic of Yemen

Ministry of Education & Scientific Research

21 SEPTEMBER UNIVERSITY for MEDICAL & APPLIED SCIENCES



Faculty OF DENTISTRY

Program of Bachelor of Dental Technology (B.D.T)

Course Specification of

Quality management in Dental Technology Laboratories

Course Code. (05.01.905)

2025



T4: This Template is Developed and Approved by CAQA-Yemen, 2023

Prepared by:

Dr: Muneer Al wesabi

Reviewed by:

Dr. ----

Head of the Department:

Dr. ----

Quality Unit:

Dr. ----

Dean

Dr. ----

I. General Information:

1.	Course Title:	Quality management in Dental Technology Laboratories			
2.	Course Code:	05.01.905			
3.	Credit Hours:	Credit Hours	Theory Contact Hours		Practical Contact Hours
			Lecture	Tutorial/Seminar	Lab Clinical
		2	2	--	-- --
4.	Level/ Semester at which this Course is offered:	Level 2 / Semester 1			
5.	Pre –Requisite (if any):	Principle Health Management			
6.	Co –Requisite (if any):	NON			
7.	Program (s) in which the Course is Offered:	Bachelor of Dental Technology (B.D.T)			
8.	Language of Teaching the Course:	English/Arabic			
9.	Location of Teaching the Course:	Faculty of DENTISTRY			
10.	Prepared by:	Assoc prof: Muneer Musleh Al wesabi			
11.	Date and Number of Approval by Council:	2025			

II. Course Description:

This course covers the fundamental concepts and principles of Total Quality Management (TQM) and quality improvement within the context of dental technology and industry. It will focus on applying quality tools and techniques to enhance processes, reduce errors, and increase customer and patient satisfaction. Students will learn how to identify quality issues, analyze their root causes, and develop effective solutions to ensure compliance with international and local standards in the dental industry. The course will also address the importance of a quality culture, the role of leadership, and employee involvement in achieving operational excellence.

	laboratory or dental clinic setting.			using up to date technology that help in understanding the diseases and its control and prevention.
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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	Describe the key components of a Total Quality Management system.	Interactive lectures		Written exam (mid and final terms and quizzes)
a2	Explain the relationship between quality and patient safety in the context of dental technology.	Interactive lectures		Written exam (mid and final terms) Assignments
(B) Alignment of Course Intended Learning Outcomes (Intellectual Skills) to Teaching Strategies and Assessment Methods:				
Course Intended Learning Outcomes		Teaching Strategies		Assessment Strategies
b1	Analyze international and local standards and regulations related to quality in the dental industry (e.g., ISO).	▪ Interactive lectures. ▪ Case studies.		Written exam (mid and final terms). Assignments
b2	Evaluate the role of leadership and quality culture in building an effective and sustainable quality system.	▪ Interactive lectures. ▪ Case studies.		Written exam (mid and final terms).
(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	Apply quality improvement tools and techniques to analyze problems and find solutions in dental work environments.	▪ Interactive lectures. ▪ Case studies.		Written exam (mid and final terms) Assignments
c2	Manage the dental technology laboratory and equipment with high quality standard of safety.	▪ Interactive lectures. ▪ Case studies		Written exam (mid and final terms).

(D) Alignment of Course Intended Learning Outcomes (Transferable Skills) to Teaching Strategies and Assessment Methods:			
Course Intended Learning Outcomes		Teaching Strategies	Assessment Strategies
d1	Actively participate in quality improvement initiatives within a dental laboratory or dental clinic setting.	Self-learning. ▪ Interactive lectures. ▪ Case studies.	▪ Oral Desiccation ▪ Homework

IV. Course Contents:

A. Theoretical Aspect:

No.	Units/Topics List	Sub Topics List	Number of Weeks	Contact Hours	Learning Outcomes (CILOs)
1-2	Chapter 1: Introduction to Quality Concept and Total Quality Management (TQM)	– Values and Principles of Total Quality and Quality Improvement in Islam – Concept and Dimensions of Quality. – Historical Evolution of Quality Management. – Quality Gurus and Their Contributions. – Principles of Total Quality Management (TQM)	2	4	a1
3-4	Chapter 2: Quality in Dental Technology and Industry	– Importance of Quality in Dental Technology Industry. – Specific Dimensions of Quality in Dental Technology Industry. – Common Challenges in Achieving Quality in Dental Laboratories	2	4	a2, b1, c1
5	Chapter 3: Quality Culture	– Concept of Quality Culture . – Role of Leadership in Achieving Total Quality.	1	2	a2, b2, c2

No.	Units/Topics List	Sub Topics List	Number of Weeks	Contact Hours	Learning Outcomes (CILOs)
	and Leadership	– Teamwork and Quality Improvement Teams.			
6	Chapter 4: Customer Focus and Patient Satisfaction	– Understanding the Customer in the Dental Industry. – Methods for Collecting Customer Data. – Measuring Customer Satisfaction. – Managing Customer Complaints and Transforming Them into Opportunities for Improvement.	1	2	a2, b2,c2,d1
7-8	Chapter 5: Quality Improvement Tools and Techniques	– The Seven Basic Quality Tools. – Advanced Improvement Methodologies (Basic Concepts).	2	4	b1, b2, c1, c2, d1
9	Med Term Exam		1	2	a1, a2, b1, b2
10	Chapter 6: Risk Management in Dental Laboratories/Clinics	– Concept of Risk Management. – Risk Management Process. – Common Types of Risks in Dental Laboratories/Clinics and Mitigation Strategies	1	2	a2, b1, c1,d1
11-12	Chapter 7: Digital Technology and Its Impact on Quality in Dental Technology	– Introduction to the Digital Revolution in Dentistry. – Key Digital Technologies and Their Impact on Quality. – Digital Integration and Workflow. – Challenges and Opportunities of Digital Technology.	2	4	a2, b2, c1, c2

No.	Units/Topics List	Sub Topics List	Number of Weeks	Contact Hours	Learning Outcomes (CILOs)
13	Chapter 8: Accreditation and International Standards in Dental Laboratories/Clinics	– Importance of Standards and Accreditation in Dental Laboratories/Clinics. – Key International Standards Relevant to Dental Laboratories/Clinics. – Process of Obtaining and Maintaining Accreditation	1	2	a2, b1, c1, d1
14-15	Chapter 9: Quality Standards, Operating Policies and Procedures, and Performance Evaluation Indicators in Dental Laboratories and Clinics	– Operational Quality Standards in Dental Laboratories and Clinics. – Standard Operating Procedures (SOPs). – Key Performance Indicators (KPIs).	2	4	a2, b1, b2, c1, d1
16	Final Theoretical Exam	...	1	2	a1, a2, b1, b2, c1, c2
Number of Weeks /and Units Per Semester			16	32	

B. Practical Aspect (Case Study):

No.	Tasks/ Experiments	Number of Weeks	Contact Hours	Learning Outcomes (CILOs)
1	NA			
Number of Weeks /and Units Per Semester				

C. Tutorial Aspect (if any):

No.	Tutorial	Number of Weeks	Contact Hours	Learning Outcomes (CILOs)
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No.	Tutorial	Number of Weeks	Contact Hours	Learning Outcomes (CILOs)
1	NA			
Number of Weeks /and Units Per Semester				

VII. Assignments:

No.	Assignments	Week Due	Mark	Aligned CILOs (symbols)
1	Home work1: System & Standards for quality management & Health Accreditation.	12 th	5	b1, b2, c1, c2, d1
2	Home work2: Policies & procedures of Patient Safety System in in Dental Laboratories and Clinics.	13 th	5	b1, b2, c1, c2, 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	Assignments	12 th - 13 th	10	%10	b1, b2, c1, c2, d1
2	Mid-Term Theoretical Exam	9 th	20	%20	a1, a2, b1, b2, c1, c2
3	Final Theoretical Exam	16 th	70	%70	
Total			100	100%	

IX. Learning Resources:

1- Required Textbook(s):

- 1- الوصابي، منير مصلح (2025)، إدارة الجودة والتحسين النوعي في معامل وعيادات الأسنان، ط1، مكتبة 48 للطباعة والنشر، صنعاء، اليمن.
- 2- Janet A. Brown , The Healthcare Quality Handbook: A Professional Resource & Study Guide,. RN, CPHQ, 2018, 30th Annual Edition, USA.

2- Essential References:

- 1- Montgomery, D. C. (2020). Introduction to Statistical Quality Control. Wiley.

- 2- Roberta Carroll (2011), Risk Management Handbook For Healthcare Organization, 6th, Usa, John Wiley & Son.

3- Electronic Materials and Web Sites etc.:

1. Kitson, J & ., Walker, A .(2008) .*Managing Quality in Dental Care* .Wiley-Blackwell. [Managing Quality in Dental Care Kitson Walker PDF](#).
2. <https://www.fdiworldddental.org/>
3. <https://pubmed.ncbi.nlm.nih.gov/>

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

Program of Bachelor of Dental Technology (B.D.T)

Course Plan (Syllabus) of Quality management in Dental Technology Laboratories

Course Code. 05.01.905

I. Information about Faculty Member Responsible for the Course:						
Name of Faculty Member:	Muneer Alwesabi	Office Hours				
Location & Telephone No.:	777405390	4				
E-mail:	mwesabi@21umas.edu.ye	SAT				

2025

II. Course Identification and General Information:

	Course Title:	Quality management in Dental Technology Laboratories				
	Course Code:	05.01.905				
	Credit Hours:	Credit Hours	Theory Contact Hours		Practical Contact Hours	
			Lecture	Tutorial/Seminar	Lab	Clinical
		2	2	--	--	--
	Level/ Semester at which this Course is offered:	Level 2 / Semester 1				
	Pre –Requisite (if any):	Principle Health Management				
	Co –Requisite (if any):	NON				
	Program (s) in which the Course is Offered:	Bachelor of Dental Technology (B.D.T)				
	Language of Teaching the Course:	English/Arabic				
	Location of Teaching the Course:	Faculty of DENTISTRY				
	Prepared by:	Assoc prof: Muneer Musleh Al wesabi				
11	Date and Number of Approval by Council:	2025				

III. Course Description:

This course covers the fundamental concepts and principles of Total Quality Management (TQM) and quality improvement within the context of dental technology and industry. It will focus on applying quality tools and techniques to enhance processes, reduce errors, and increase customer and patient satisfaction. Students will learn how to identify quality issues, analyze their root causes, and develop effective solutions to ensure compliance with international and local standards in the dental industry. The course will also address the importance of a quality culture, the role of leadership, and employee involvement in achieving operational excellence.

IV. Course Intended Learning Outcomes (CILOs) :

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

	A. Knowledge and Understanding:
a1	Describe the key components of a Total Quality Management system.
a2	Explain the relationship between quality and patient safety in the context of dental technology.
	B. Intellectual Skills:
b1	Analyze international and local standards and regulations related to quality in the dental industry (e.g., ISO).
b2	Evaluate the role of leadership and quality culture in building an effective and sustainable quality system.
	C. Professional and Practical Skills:
c1	Apply quality improvement tools and techniques to analyze problems and find solutions in dental work environments.
c2	Manage the dental technology laboratory and equipment with high quality standard of safety.
	D. Transferable Skills:
d1	Actively participate in quality improvement initiatives within a dental laboratory or dental clinic setting.

V. Course Contents:

A. Theoretical Aspect:

No.	Units/Topics List	Sub Topics List	Number of Weeks	Contact Hours
1-2	Chapter 1: Introduction to Quality Concept and Total Quality Management (TQM)	– Values and Principles of Total Quality and Quality Improvement in Islam – Concept and Dimensions of Quality. – Historical Evolution of Quality Management. – Quality Gurus and Their Contributions. – Principles of Total Quality Management	2	4

No.	Units/Topics List	Sub Topics List	Number of Weeks	Contact Hours
		(TQM)		
3-4	Chapter 2: Quality in Dental Technology and Industry	– Importance of Quality in Dental Technology Industry. – Specific Dimensions of Quality in Dental Technology Industry. – Common Challenges in Achieving Quality in Dental Laboratories	2	4
5	Chapter 3: Quality Culture and Leadership	– Concept of Quality Culture . – Role of Leadership in Achieving Total Quality. – Teamwork and Quality Improvement Teams.	1	2
6	Chapter 4: Customer Focus and Patient Satisfaction	– Understanding the Customer in the Dental Industry. – Methods for Collecting Customer Data. – Measuring Customer Satisfaction. – Managing Customer Complaints and Transforming Them into Opportunities for Improvement.	1	2
7-8	Chapter 5: Quality Improvement Tools and Techniques	– The Seven Basic Quality Tools. – Advanced Improvement Methodologies (Basic Concepts).	2	4
9	Med Term Exam		1	2
10	Chapter 6: Risk Management in Dental Laboratories/Clinics	– Concept of Risk Management. – Risk Management Process. – Common Types of Risks in Dental Laboratories/Clinics and Mitigation Strategies	1	2
11-12	Chapter 7: Digital Technology and	– Introduction to the Digital Revolution in Dentistry.	2	4

No.	Units/Topics List	Sub Topics List	Number of Weeks	Contact Hours
	(TQM)	– Concept and Dimensions of Quality. – Historical Evolution of Quality Management. – Quality Gurus and Their Contributions. – Principles of Total Quality Management (TQM)		
3-4	Chapter 2: Quality in Dental Technology and Industry	– Importance of Quality in Dental Technology Industry. – Specific Dimensions of Quality in Dental Technology Industry. – Common Challenges in Achieving Quality in Dental Laboratories	2	4
5	Chapter 3: Quality Culture and Leadership	– Concept of Quality Culture . – Role of Leadership in Achieving Total Quality. – Teamwork and Quality Improvement Teams.	1	2
6	Chapter 4: Customer Focus and Patient Satisfaction	– Understanding the Customer in the Dental Industry. – Methods for Collecting Customer Data. – Measuring Customer Satisfaction. – Managing Customer Complaints and Transforming Them into Opportunities for Improvement.	1	2
7-8	Chapter 5: Quality Improvement Tools and Techniques	– The Seven Basic Quality Tools. – Advanced Improvement Methodologies (Basic Concepts).	2	4
9	Med Term Exam		1	2

No.	Units/Topics List	Sub Topics List	Number of Weeks	Contact Hours
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11-12	Chapter 7: Digital Technology and Its Impact on Quality in Dental Technology	– Introduction to the Digital Revolution in Dentistry. – Key Digital Technologies and Their Impact on Quality. – Digital Integration and Workflow. – Challenges and Opportunities of Digital Technology.	2	4
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16	Final Theoretical Exam	– ...	1	2
– Number of Weeks /and Units Per Semester			16	32

B. Case Studies and Practical Aspect:

No.	Tasks/ Experiments	Number of Weeks	Contact Hours
1	NA		
Number of Weeks /and Units Per Semester			

No.	Tasks/ Experiments	Number of Weeks	Contact Hours
1	NA		
Number of Weeks /and Units Per Semester			

No.	Tutorial	Number of Weeks	Contact Hours
1	NA		
Number of Weeks /and Units Per Semester			

VI. Teaching Strategies of the Course:

خطأ! لم يتم العثور على مصدر المرجع.

VII. Assessment Methods of the Course:

خطأ! لم يتم العثور على مصدر المرجع.

VIII. Assignments:

No.	Assignments	Week Due	Mark
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Total			10

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