

Dentistry (English)			
Bachelor	TR-NQF-HE: Level 6	QF-EHEA: First Cycle	EQF-LLL: Level 6

## Course Introduction and Application Information

Course Code:	DENT203		
Course Name:	Dental Materials		
Semester:	Fall		
Course Credits:	<div>ECTS</div> <div>2</div>		
Language of instruction:	English		
Course Condition:			
Does the Course Require Work Experience?:	No		
Type of course:	Compulsory Courses		
Course Level:	<div> <div>Bachelor</div> <div>TR-NQF-HE:6. Master`s Degree</div> <div>QF-EHEA:First Cycle</div> <div>EQF-LLL:6. Master`s Degree</div> </div>		
Mode of Delivery:	Face to face		
Course Coordinator:	Doç. Dr. MUSTAFA BORGA DÖNMEZ		
Course Lecturer(s):	Assoc. Prof. Mustafa Borge Dönmez		
Course Assistants:			

## Course Objective and Content

Course Objectives:	1. Learning the fundamentals of Material Science 2. Familiarizing with the characteristics and properties of dental materials used in different kinds of treatments 3. Learning the application and manipulation of the various materials used in dentistry
Course	1. Learning the physical, chemical, biological and esthetic properties of materials used in

Content:	dentistry 2. Learning the manipulation and usage of dental materials in clinical practice 3. Discussing the selection of proper materials for the specific treatments 4. Identifying the evaluation criteria of dental materials
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## Learning Outcomes

The students who have succeeded in this course;

- 1) Identifies and differentiates between the various types of dental materials and their respective characteristics and properties
- 2) Describes and explains the behavior of different classes of dental materials according to their properties when they are used in their specific clinical application
- 3) Integrates the knowledge and understanding of the esthetic, chemical, biological and mechanical needs and consideration with the properties and limitations of dental materials
- 4) Selects, manipulates and uses any dental material according to its specific properties in a specific dental application
- 5) Evaluates effects of specific materials on the oral environment and the effectiveness of such materials in prevention and treatment of oral disease

## Course Flow Plan

Week	Subject	Related Preparation
1)	Physical and Chemical Properties of the Materials Used in Dentistry	Reading the Reference Textbook
2)	Biological and Esthetic Properties of the Materials Used in Dentistry	Reading the Reference Textbook
3)	Gypsum used in Dentistry	Reading the Reference Textbook
4)	Waxes used in Dentistry	Reading the Reference Textbook
5)	Polymers in Dentistry	Reading the Reference Textbook
6)	Denture Base and Lining Materials and Artificial Teeth	Reading the Reference Textbook
7)	Impression Materials	Reading the Reference Textbook
8)	1st Mid-term Exam	Reading the Reference Textbook

9)	Model and Die Materials	Reading the Reference Textbook
10)	Investments and Casting	Reading the Reference Textbook
11)	Metals and Alloys used in Dentistry	Reading the Reference Textbook
12)	Dental Ceramics	Reading the Reference Textbook
13)	Dental Cements	Reading the Reference Textbook
14)	Temporary Crown and Bridge Materials	Reading the Reference Textbook

## Sources

Course Notes / Textbooks:	<ol style="list-style-type: none"> <li>McCabe JF, Walls AWG. Applied Dental Materials. 9th Edition. Blackwell Publishing, 2008.</li> <li>O'Brien WJ. Dental Materials and Their Selection. 4th Edition. Quintessence Publishing, 2008.</li> <li>von Fraunhofer JA. Dental Materials at a Glance. 2nd Edition. WileyBlackwell Publishing, 2013.</li> <li>Anusavice KJ, Shen C, Rawls HR. Philips' Science of Dental Materials. 12th Edition. Elsevier Saunders Publishing, 2013.</li> <li>Powers JM, Wataha JC, Chen Y. Dental Materials: Foundations and Applications. 11th Edition. Elsevier Publishing, 2017.</li> </ol>
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## Course - Program Learning Outcome Relationship

Course Learning Outcomes	1	2	3	4	5

Program Outcomes	1	2	3	4	5
Course Learning Outcomes	1	2	3	4	5
1) Has basic and up-to-date knowledge in the field of dentistry, follows scientific publications, and applies evidence-based data to his/her professional practice.	2	2	2	2	2
2) Knows well and effectively uses devices, tools, and materials specific to diagnosis and treatment in the field of dentistry.	3	3	3	3	3
3) Evaluates the knowledge in the field of dentistry critically, integrates it with the knowledge of disciplines in the field of health, uses it by analyzing and synthesizing it.	2	2	2	2	2
4) Produces projects related to the field of dentistry, can work with other health disciplines, takes part as a member of the research team and evaluates and reports the results obtained at a scientific level.					
5) Uses information that will contribute to the dentistry profession during practice, takes responsibility, and produces solutions in unforeseen situations.	2	2	2	2	2
6) Shares, compares, and exchanges dental knowledge with professional colleagues in social and scientific environments in written, verbal, and visual forms.					
7) Within the framework of social, scientific, and ethical values including patient privacy, communicates with patients and their relatives, knows all the characteristics of the patient, and recommends the most appropriate treatment with a patient-centered approach.					
8) Follows technological developments, participates in national and international studies, and shares and presents own observations, experiences, and research to further advance dental practices.					
9) By adopting the principle of lifelong learning throughout the dentistry profession, follows current evidence-based dental knowledge and uses it during his professional practice.					
10) During dental practice, in cases such as abuse and addiction, performs the treatment by exhibiting the behaviors required by social ethics and legal rules, and collects and records the relevant data.					
11) Uses basic and current knowledge in the field of dentistry during professional practice for the benefit of society within the framework of national values and country realities.					
12) In natural disasters and emergency cases, takes the protective measures required by the dentistry profession; performs professional practices that benefit patients and society					
13) Generates ideas regarding health policy in dentistry, prioritizes individual and					

public health, and carries out preventive and therapeutic medical practices within the framework of scientific, ethical, and quality processes.	1	2	3	4	5
<b>Course Learning Outcomes</b>					
14) Differentiates the signs and symptoms commonly encountered in the dentistry profession, makes a treatment plan and refers when necessary, and manages diseases and clinical situations regarding their urgency and patient priority.	2	2	2	2	2
15) Can assume the leadership responsibility of the team he/she works for, manage it following scientific criteria, and support the professional development of the team.					

### Course - Learning Outcome Relationship

No Effect	1 Lowest	2 Average	3 Highest

	Program Outcomes	Level of Contribution
1)	Has basic and up-to-date knowledge in the field of dentistry, follows scientific publications, and applies evidence-based data to his/her professional practice.	2
2)	Knows well and effectively uses devices, tools, and materials specific to diagnosis and treatment in the field of dentistry.	3
3)	Evaluates the knowledge in the field of dentistry critically, integrates it with the knowledge of disciplines in the field of health, uses it by analyzing and synthesizing it.	2
4)	Produces projects related to the field of dentistry, can work with other health disciplines, takes part as a member of the research team and evaluates and reports the results obtained at a scientific level.	
5)	Uses information that will contribute to the dentistry profession during practice, takes responsibility, and produces solutions in unforeseen situations.	2
6)	Shares, compares, and exchanges dental knowledge with professional colleagues in social and scientific environments in written, verbal, and visual forms.	
7)	Within the framework of social, scientific, and ethical values including patient privacy, communicates with patients and their relatives, knows all the characteristics of the patient, and recommends the most appropriate treatment with a patient-centered approach.	
8)	Follows technological developments, participates in national and international studies, and shares and presents own observations, experiences, and research to further advance dental practices.	
9)	By adopting the principle of lifelong learning throughout the dentistry profession, follows	

	current evidence-based dental knowledge and uses it during his professional practice.	
10)	During dental practice, in cases such as abuse and addiction, performs the treatment by exhibiting the behaviors required by social ethics and legal rules, and collects and records the relevant data.	
11)	Uses basic and current knowledge in the field of dentistry during professional practice for the benefit of society within the framework of national values and country realities.	
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14)	Differentiates the signs and symptoms commonly encountered in the dentistry profession, makes a treatment plan and refers when necessary, and manages diseases and clinical situations regarding their urgency and patient priority.	2
15)	Can assume the leadership responsibility of the team he/she works for, manage it following scientific criteria, and support the professional development of the team.	

### Assessment & Grading

Semester Requirements	Number of Activities	Level of Contribution
Midterms	1	% 40
Final	1	% 60
<b>total</b>		<b>% 100</b>
PERCENTAGE OF SEMESTER WORK		% 40
PERCENTAGE OF FINAL WORK		% 60
<b>total</b>		<b>% 100</b>

### Workload and ECTS Credit Calculation

Activities	Number of Activities	Preparation for the Activity	Spent for the Activity Itself	Completing the Activity Requirements	Workload
Course Hours	56	1	1		112
Midterms	2	20			40

Final	1	40			40
Total Workload					192