

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

### Course Introduction and Application Information

Course Code:	UNI352		
Course Name:	Principles and Applications of Analytical Research Methods		
Semester:	Fall		
Course Credits:	<div>ECTS</div> <div>5</div>		
Language of instruction:	English		
Course Condition:			
Does the Course Require Work Experience?:	No		
Type of course:	University Elective		
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:	E-Learning		
Course Coordinator:	Dr. Öğr. Üy. ESMA NUR OKATAN		
Course Lecturer(s):	Dr. Öğr. Ü. Esma Nur Okatan		
Course Assistants:			

### Course Objective and Content

Course Objectives:	The main purpose of the course is to enable students to adapt more easily to evidence-based medicine practices and to better understand the current scientific data published in their fields. In addition, encouraging students to participate in scientific research projects is one of the aims of this course.
Course	Introduction to research methodology

Content:	Immunological techniques Microscopy and application areas Bioluminescence and application areas Electrophysiological recording methods Radioactive isotopes and applications Spectroscopy and application areas In vivo experimental disease models In vitro experimental disease models Cellular Signaling
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## Learning Outcomes

The students who have succeeded in this course;

- 1) To have basic knowledge of basic medical science research methods
- 2) To be able to understand the main ideas of scientific research articles
- 3) Reinforcement of basic knowledge learned in committee lectures with clinical and research examples

## Course Flow Plan

Week	Subject	Related Preparation
1)	Introduction to research methodology	
2)	Immunological techniques-I	
3)	Immunological techniques-II	
4)	Microscopy and its applications-I	
5)	Microscopy and its applications-II	
6)	Bioluminescence and its applications	
7)	Electrophysiological Recording Techniques-I	
8)	Electrophysiological Recording Techniques-II	
9)	Discussion of the assignments	
10)	Radioactive isotopes and its applications	
11)	Spektroskopie and its applications-I	
12)	In vivo experimental disease models	
13)	In vitro experimental disease models	
14)	Cell Signaling	

## Sources

Course Notes / Textbooks:	<p>Helmut Giinzler and Alex Williams Handbook of Analytical Techniques 2002 Wiley,</p> <p>Roitt's Essential Immunology, Thirteenth Edition. Peter J. Delves, Seamus J. Martin, Dennis R. Burton, and Ivan M. Roitt.</p> <p>© 2017 John Wiley &amp; Sons Ltd. Published 2017 by John Wiley &amp; Sons Ltd. Companion</p> <p><a href="https://pubmed.ncbi.nlm.nih.gov/">https://pubmed.ncbi.nlm.nih.gov/</a></p>
References:	<p>Helmut Giinzler and Alex Williams Handbook of Analytical Techniques 2002 Wiley,</p> <p>Roitt's Essential Immunology, Thirteenth Edition. Peter J. Delves, Seamus J. Martin, Dennis R. Burton, and Ivan M. Roitt.</p> <p>© 2017 John Wiley &amp; Sons Ltd. Published 2017 by John Wiley &amp; Sons Ltd. Companion</p> <p><a href="https://pubmed.ncbi.nlm.nih.gov/">https://pubmed.ncbi.nlm.nih.gov/</a></p>

## Course - Program Learning Outcome Relationship

Course Learning Outcomes	1	2	3
Program Outcomes			
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) Knows well and effectively uses devices, tools, and materials specific to diagnosis and treatment in the field of dentistry.			
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.			
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.			
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.	1	2	3
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.			
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.			
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)	Knows well and effectively uses devices, tools, and materials specific to diagnosis and treatment in the field of dentistry.	
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.	
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.	
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.	
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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
Homework Assignments	2	% 100
<b>total</b>		<b>% 100</b>

PERCENTAGE OF SEMESTER WORK		% 100
PERCENTAGE OF FINAL WORK		%
<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
Homework Assignments	2	60			120
<b>Total Workload</b>					<b>120</b>