



AYDIN ADNAN MENDERES UNIVERSITY COURSE INFORMATION FORM

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|--|---|---|----------------------|--|---|--------------------------------|---|------------|---|
| Course Title | | Orthodontic Force and Biomechanics | | | | | | | |
| Course Code | | ORD635 | | Course Level | | Third Cycle (Doctorate Degree) | | | |
| ECTS Credit | 6 | Workload | 150 (<i>Hours</i>) | Theory | 2 | Practice | 0 | Laboratory | 0 |
| Objectives of the Course | | Discuss the biologic responses to orthodontic force that underlie biomechanics Design and application of orthodontic mechanics. | | | | | | | |
| Course Content | | Periodontal tissues structure and function, the biologic control of the tooth movement, anchorage control, orthodontics force sources and their applications. | | | | | | | |
| Work Placement | | N/A | | | | | | | |
| Planned Learning Activities and Teaching Methods | | | | Explanation (Presentation), Discussion | | | | | |
| Name of Lecturer(s) | | | | | | | | | |

Assessment Methods and Criteria

| Method | Quantity | Percentage (%) |
|---------------------|----------|----------------|
| Midterm Examination | 1 | 40 |
| Final Examination | 1 | 60 |

Recommended or Required Reading

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| 1 | Graber T, Swain B: Orthodontics, Current Principles and Techniques, The CV Mosby Comp, 1985. |
| 2 | Ülgen M: Ortodontik Tedavi Prensipleri, A.Ü Dişhekimliği Fakültesi Yayınları Ankara 1983. |
| 3 | Proffit W, Fields H: Contemporary Orthodontics, The CV Mosby Company, Saint Louis 1986. |

| Week | Weekly Detailed Course Contents | |
|------|---------------------------------|--|
| 1 | Theoretical | Force and movement |
| 2 | Theoretical | Center of Resistance and rotation |
| 3 | Theoretical | Biomechanics of tooth movement and movement types |
| 4 | Theoretical | Properties of orthodontic force |
| 5 | Theoretical | Moment-force, load-deflection rate |
| 6 | Theoretical | Principles of orthodontic wires |
| 7 | Theoretical | Biomechanic principles of orthodontic wires |
| 8 | Theoretical | Comparison of fixed techniques |
| 9 | Theoretical | Biomechanics of activator |
| 10 | Theoretical | Biomechanics of cervical and occipital headgear |
| 11 | Theoretical | Activator-headgear combination of biomechanics |
| 12 | Theoretical | Biomechanics of RPE and RHG |
| 13 | Theoretical | Biomechanics of maxillary orthopedic splint |
| 14 | Theoretical | Biomechanics of posterior bite block and vertical chin cup |

Workload Calculation

| Activity | Quantity | Preparation | Duration | Total Workload |
|---------------------------------------|----------|-------------|----------|----------------|
| Lecture - Theory | 14 | 0 | 2 | 28 |
| Assignment | 2 | 0 | 11 | 22 |
| Individual Work | 8 | 0 | 10 | 80 |
| Midterm Examination | 1 | 9 | 1 | 10 |
| Final Examination | 1 | 9 | 1 | 10 |
| Total Workload (Hours) | | | | 150 |
| [Total Workload (Hours) / 25*] = ECTS | | | | 6 |

*25 hour workload is accepted as 1 ECTS

Learning Outcomes

| | |
|---|---------------------------------|
| 1 | To learn force in orthodontics. |
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| 2 | To learn characteristics of force |
| 3 | To learn biomechanics of various appliances. |
| 4 | Students succeeded in this course will have the opportunity to benefit from fixed treatment mechanics by using extraoral appliances. |
| 5 | Intrusion movement |

Programme Outcomes (Orthodontics Doctorate)

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| 1 | Must know the transition procedure from primary dentition to permanent dentition, tooth eruption guidance, the precautions for tooth absence and bad habits. |
| 2 | May be able to diagnose the orthodontic malocclusion and able to present treatment alternatives for the case. |
| 3 | May be able to apply the analysis necessary for diagnosis, such as cephalometric analysis and model analysis and must know the occlusion. |
| 4 | Must know the orthodontic tooth movement, the force necessary for the tooth movement, and be able to take the precautions according to the unwanted tooth movements. |
| 5 | Must be able to diagnose the functional malocclusions and apply functional appliances. |
| 6 | Must be able to apply fixed treatment techniques used in our clinic such as edgewise, Roth, Alexander, MBT |
| 7 | Must be aware of the new treatment techniques and improvements in orthodontics. |
| 8 | Must know how the craniofacial complex develops and be able to follow the patient's development and growth. |
| 9 | Must be able to know how to apply removable appliances and their fabrication and their effects. |
| 10 | Must know about the retention period for the patient in order to keep the treatment results stable. |

Contribution of Learning Outcomes to Programme Outcomes 1:Very Low, 2:Low, 3:Medium, 4:High, 5:Very High

| | L1 | L2 | L3 | L4 |
|----|----|----|----|----|
| P4 | 5 | 5 | 5 | 5 |
| P6 | 2 | 2 | 4 | 4 |
| P7 | | | 3 | 3 |
| P9 | | | 3 | 3 |

