## Course name

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| Tooth morphology and dental anthropology |

## Department/chair

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| Department of dental anhtropology |

## Address of the department/chair

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| School of Dental Medicine, Gundulićeva 5, HR-10000 Zagreb |

## Mandatory or elective course

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| --- |
| Mandatory course |

## Year of study

|  |
| --- |
| 2nd year |

## Semester

|  |
| --- |
| Winter and summer semester |

## ECTS

|  |
| --- |
| 9,5 ECTS points |

## Course leader

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| Prof. dr. sc. Hrvoje Brkić, brkic@sfzg.hr |

## Other teachers on the course

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| prof. dr. sc. Jelena Dumančić, dumancic@sfzg.hr  assc. prof. dr. sc. Ivana Savić Pavičin, savic@sfzg.hr  assc. prof. dr. sc. Marin Vodanović, vodanovic@sfzg.hr  Luka Banjšak, dr. dent. med., lbanjsak@sfzg.hr |

## Number of hours

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Winter semester** | **Summer semester** | **Total (winter+summer)** |
| **Lectures** | 15 | 15 | 30 |
| **Seminars** | - | - | - |
| **Practicals** | 30 | 45 | 75 |
| **Total** | 45 | 60 | 105 |

1 hour = 45 minutes

## Description and aim of the course

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| The purpose of the course is, from a biomedical and anthropological stance, to get acquainted with the macroscopic and microscopic features of teeth and the oral cavity as an integral part of the digestive system. The aim of the course is to enable the student to independently make models of deciduous and permanent dentition teeth; to distinguish deciduous from permanent teeth; to recognize natural teeth and mark them appropriately; to understand the function of the stomatognath system and thus be prepared for working in the preclinical and clinical environment. |

## Course enrolment requirements

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| There are no enrolment requirements for 2nd year students. |

## Learning outcomes at the level of the study program to which the subject contributes:

Knowledge, skills and competencies related to professionalism, ethics and law

Knowledge, skills and competencies related to communication and social skills

Knowledge, skills and competencies related to basic knowledge and the ability to gather information from the literature

Knowledge, skills and competencies related to the collection of clinical information

Knowledge, skills and competencies related to diagnosis and therapy planning

Knowledge, skills and competencies related to the therapy, establishment and maintenance of oral health

Knowledge, skills and competencies related to preventive measures and health promotion

## Course learning outcomes

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| **Knowledge** |
| 1. Describe the morphological characteristics of deciduous and permanent dentition teeth and their variations |
| 1. Describe the histological features of dental tissues and the development of teeth and jaws |
| 1. Describe the physiology of the oral cavity |
| 1. Describe the function of individual tooth types and their self-protective characteristics |
| 1. Describe the resorption of the roots of deciduous teeth and the order of eruption of deciduous and permanent dentition teeth. |
| **Skills** |
| 1. Make models of decidious and permanent dentition teeth in plaster or plasticine |
| 1. Apply different ways of marking deciduous and permanent teeth - Zsigmondy (coordinate, 2. Palmer) system, FDI system, Haderup system, universal system |
| 1. Recognize deciduous and permanent teeth on native tooth samples and X-rays |
| **Competencies** |
| 1. Recognize the structures and stages of tooth development on histological samples |
| 1. Recognize intermaxillary relationships on upper and lower jaw models |

## Course content

Lectures

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| --- | --- | --- |
|  | **Topics – winter semester** | **Hours** |
|  | Introductory remarks on the subject and human teeth | 1 |
|  | Tooth marking, odontometry, permanent incisors | 1 |
|  | Permanent canines | 1 |
|  | Human premolars, variety of incisors and canines | 1 |
|  | Permanent molars of humans | 1 |
|  | Diversity of premolars and molars | 1 |
|  | Gonadal dysgenesis (Turner and Klinefelter syndrome) and oral organs | 1 |
|  | Human’s decidious teeth | 1 |
|  | Early development of human teeth | 1 |
|  | Root and periodontal ligament development | 1 |
|  | Development of occlusion | 1 |
|  | The human digestive system | 1 |
|  | Dental arch; lip-cheek-tongue system | 1 |
|  | Articulation of teeth, mechanism and features | 1 |
|  | Radiographic appearance of teeth and jaws | 1 |
|  | **Topics – summer semester** | **Hours** |
|  | Histological structure of hard dental tissues | 1 |
|  | Histological structure of enamel | 1 |
|  | Histological structure of dental pulp | 1 |
|  | Histological structure of dentin | 1 |
|  | Dental cement | 1 |
|  | Periodontal anatomy | 1 |
|  | Tooth eruption and root resorption | 1 |
|  | The mucosa of the oral cavity | 1 |
|  | Alveolar bone | 1 |
|  | Characteristics of animal teeth | 1 |
|  | Periodontal ligament physiology | 1 |
|  | Stem cells from dental tissues | 1 |
|  | Dental profile | 1 |
|  | Holiday of National day | / |
|  | Memento morphology of permanent and deciduous teeth | 1 |

1 hour = 45 minutes

Practicals

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|  | **Topics – winter semester** | **Hours** |
|  | Introduction remarks  Modeling 11 / 21  Modelling 13 / 23 | 2 |
|  | Angle, bow and root rule  Marking of the teeth  Modelling 14 / 24  Carving 15 / 25 | 2 |
|  | Modelling 16 / 26  Carving 12 / 22 | 2 |
|  | Modelling 17/ 27  Carving 37 / 47 | 2 |
|  | Modelling 31 / 41  Carving 33 / 43 | 2 |
|  | Modelling 34 / 44  Carving 35 / 45 | 2 |
|  | Modelling 32 / 42  Carving 36 / 46 | 2 |
|  | Modelling 54 / 64  Carving 51 / 61 | 2 |
|  | Modelling 52 / 62  Carving 55 / 65 | 2 |
|  | Modelling 53 / 63  Carving 73 / 83 | 2 |
|  | Modelling 71 / 81  Carving 75 / 85 | 2 |
|  | Modelling 72 / 82  Carving 74 / 84 | 2 |
|  | Drawing details of the shape of the crown, root and core parts of permanent teeth in different sections | 2 |
|  | Drawing details of the shape of the crown, root and core parts of deciduous teeth in different sections | 2 |
|  | Control modeling / carving of two teeth without template | 2 |
|  | **Topics – summer semester** | **Hours** |
|  | Observation of teeth and their cross-sections by groups | 3 |
|  | Histological structure of enamel | 3 |
|  | Histological structure of dental pulp | 3 |
|  | Histological structure of dentin | 3 |
|  | Structure and function of the periodontium | 3 |
|  | Embryonic tooth development / Histological structure of deciduous teeth | 3 |
|  | Tooth eruption and resorption of deciduous tooth roots | 3 |
|  | Fundamentals of oral and dental histology | 3 |
|  | Radiological analysis of teeth and jaws | 3 |
|  | Occlusion | 3 |
|  | Dental anomalies | 3 |
|  | ASUDAS | 3 |
|  | Odontometry | 3 |
|  | Holiday of national day | 3 |
|  | Pre-examination microscopy | 3 |

1 hour = 45 minutes

## Obligations that students have on the course

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| Students are required to come to class and fulfil entrusted tasks. |

## Description of the method of evaluation of students work on the course

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| Learning outcomes are checked at occasional colloquia during exercises, at control modelling / carving of teeth without a template, and at the final exam which consists of a practical and oral part. |

## Exam

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| The exam consists of a practical and oral part. |

## Exam dates

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | November | December | January | February | April | May | June | July | August | September |
| Dates |  |  | 27 | 13 |  |  | 12,19,26 | 3,10 | 28 | 11 |

## Literature (mandatory)

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| * Brkić H, Dumančić J, Vodanović M. Biology and morphology of human teeth. Jastrebarsko; Naklada Slap: 2021. |

## Literature (supplementary)

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| * Ash MM, Nelson SJ. Dental anatomy, physiology and occlusion. Philadelphia; Saunders: 2003. * Berkovitz BKB, Holland GR, Moxham BJ. Oral anatomy, histology and embryology. Edinburgh; Mosby: 2002. * Brand RW, Isselhard DE. Anatomy of Orofacial Structures. St. Louis; Mosby: 2003. * Hillson S. Dental anthropology. Cambridge; Cambridge University Press: 1996. * Ten Cate AR. Oral Histology: Development, Structure and Function. St. Louis; Mosby: 1998. * Dumančić J. Postupak vrednovanja ključnih morfoloških obilježja trajne denticije: Arizona State University dentoantropološki sustav, I. dio. Sonda. 2014;15(27):66-72. |