



# Pomeranian Medical University in Szczecin

## SYLLABUS of the MODULE (SUBJECT)

### General Information

|   |  |
|---|--|
| <b>Module title: Orthodontics</b>       |  |
| Module type                             | Obligatory   |
| Faculty PMU                             | Faculty of Medicine and Dentistry  |
| Major                                   | Dentistry  |
| Level of study                          | long-cycle (S2J)   |
| Mode of study                           | full-time studies  |
| Year of studies, semester               | Year 3, semester VI  |
| ECTS credits (incl. semester breakdown) | 2  |
| Type/s of training                      | lectures (7h) / e-learning lectures (3h) / seminars (10h) / practical (25h)  |
| Form of assessment *                    | <input checked="" type="checkbox"/> graded assessment: <ul style="list-style-type: none"> <li><input checked="" type="checkbox"/> descriptive</li> <li><input type="checkbox"/> test</li> <li><input type="checkbox"/> practical</li> <li><input type="checkbox"/> oral</li> </ul> <input type="checkbox"/> non-graded assessment <ul style="list-style-type: none"> <li><input type="checkbox"/> final examination <ul style="list-style-type: none"> <li><input type="checkbox"/> descriptive</li> <li><input type="checkbox"/> test</li> <li><input type="checkbox"/> practical</li> <li><input type="checkbox"/> oral</li> </ul> </li> </ul> |
| Head of the Department/ Clinic, Unit    | Prof. dr hab. n.med. Krzysztof Woźniak   |
| Tutor responsible for the module        | lek. dent. Jacek Światała  |
| Department's/ Clinic's/ Unit's website  | Zakład Ortodoncji PUM<br>al. Powst. Wlkp. 72, 70-111 Szczecin<br>tel.: 91 4661702<br>e-mail: kizortod@pum.edu.pl<br><a href="https://www.pum.edu.pl/wydzialy/wydzial-medycyny-i-stomatologii/zaklad-ortodoncji">https://www.pum.edu.pl/wydzialy/wydzial-medycyny-i-stomatologii/zaklad-ortodoncji</a>  |
| Language                                | English  |

\* replace  into  where applicable

## Detailed information

|                                      |             |   |
|--------------------------------------|-------------|---|
| <b>Module objectives</b>             |             | The aim of the course is: to integrate the knowledge of the ontogenetic and phylogenetic development of the facial part of the skull in connection with the issues of orthodontics, learning to assess the proper development of the masticatory organ, the ability to assess the condition of the masticatory organ in terms of the occurrence of malocclusion, knowledge of the etiology of malocclusion, the ability to perform selected procedures in the field of prophylaxis and early orthodontic treatment, knowledge of malocclusion treatment techniques with the use of modern methods with the use of modern tools and equipment. |
| Prerequisite /essential requirements | Knowledge   | <i>Knowledge, skills and competences at the graduation level of the second year of studies in the field of medicine and dentistry.</i>  |
|                                      | Skills      |   |
|                                      | Competences |   |

## Description of the learning outcomes for the subject /module

| No. of learning outcome | Student, who has passed the (subject) knows /is able to /can:  | SYMBOL (referring the standards) | Method of verification of learning outcomes* |
|-------------------------|--|----------------------------------|--|
| W01                     | knows and understands occlusion norms and deviations in different phases of ontogenesis  | F.W1.                            | S, O   |
| W02                     | knows and understands the principles of preventive and therapeutic management in the masticatory system diseases at various stages of development                    | F.W2.                            | S, O   |
| W03                     | knows and understands principles of construction and operation of removable and fixed orthodontic appliances   | F.W17.                           | S, O   |
| U01                     | is able to interview patient or his/her family   | F.U1.                            | S, O   |
| U02                     | is able to carry out dental examination of patient   | F.U2.                            | S, O   |
| U03                     | is able to provide patient with explanation about nature of ailment, establish treatment confirmed by informed consent of the patient as well as establish prognosis | F.U3.                            | S, O   |
| U04                     | is able to provide patient or his/her family with the information about unfavorable prognosis  | F.U4.                            | S, O   |
| U05                     | is able to interpret results of auxiliary diagnostics and consultations  | F.U6.                            | S, O   |
| U06                     | is able to determine indications and contraindications to a specified dental procedure   | F.U7.                            | S, O   |
| U07                     | is able to manage general and local complications during and after dental procedures   | F.U9.                            | S, O   |
| U08                     | is able to keep current patient records, refer patient to general and specialist dental and medical examination or treatment   | F.U11.                           | S, O   |

|     |   |        |      |
|-----|---|--------|------|
| U09 | is able to formulate research problems in dentistry   | F.U12. | S, O |
| U10 | is able to present selected medical problems in oral or written form relevantly to recipient standards  | F.U13. | S, O |
| U11 | is able to establish treatment for stomatognathic system tissues diseases   | F.U15. | S, O |
| U12 | is able to diagnose, differentiate and classify malocclusion  | F.U18. | S, O |
| U13 | can help in the orthodontic appliance damage  | F.U19. | S, O |
| U14 | is able to execute simple orthodontic appliances  | F.U20. | S, O |
| U15 | is able to carry out treatment to prevent malocclusion during primary dentition and early dentition replacement phase                                     | F.U21. | S, O |
| K01 | is ready to establish and maintain deep and respectful contact with the patient as well as to show understanding for ideological and cultural differences | K.1.   | S, O |
| K02 | is ready to be guided by the patient wellbeing  | K.2.   | S, O |
| K03 | is ready to notice and recognize own limitations, make self-assessment of educational deficits and needs  | K.5.   | S, O |
| K04 | is ready to propagate health-promoting behavior   | K.6.   | S, O |

Table presenting LEARNING OUTCOMES in relation to the form of classes

| No. of learning outcome | Learning outcomes | Type of training |         |                   |                  |             |            |          |
|-------------------------|-------------------|------------------|---------|-------------------|------------------|-------------|------------|----------|
|                         |                   | Lecture          | Seminar | Practical classes | Clinical classes | Simulations | E-learning | Other... |
| W01                     | F.W1.             | X                | X       |                   | X                |             | X          |          |
| W02                     | F.W2.             | X                | X       |                   | X                |             | X          |          |
| W03                     | F.W17.            | X                | X       |                   | X                |             | X          |          |
| U01                     | F.U1.             |                  |         |                   | X                |             |            |          |
| U02                     | F.U2.             |                  |         |                   | X                |             |            |          |
| U03                     | F.U3.             |                  |         |                   | X                |             |            |          |
| U04                     | F.U4.             |                  |         |                   | X                |             |            |          |
| U05                     | F.U6.             |                  | X       |                   | X                |             |            |          |
| U06                     | F.U7.             |                  | X       |                   | X                |             |            |          |
| U07                     | F.U9.             |                  | X       |                   | X                |             |            |          |
| U08                     | F.U11.            |                  |         |                   | X                |             |            |          |
| U09                     | F.U12.            |                  | X       |                   | X                |             |            |          |
| U10                     | F.U13.            |                  | X       |                   | X                |             |            |          |
| U11                     | F.U15.            | X                | X       |                   | X                |             | X          |          |
| U12                     | F.U18.            | X                | X       |                   | X                |             | X          |          |
| U13                     | F.U19.            |                  |         |                   | X                |             |            |          |
| U14                     | F.U20.            |                  |         |                   | X                |             |            |          |
| U15                     | F.U21.            |                  |         |                   | X                |             |            |          |
| K01                     | K.1.              |                  |         |                   | X                |             |            |          |
| K02                     | K.2.              |                  |         |                   | X                |             |            |          |
| K03                     | K.5.              |                  |         |                   | X                |             |            |          |

|     |      |  |  |  |   |  |  |  |
|-----|------|--|--|--|---|--|--|--|
| K04 | K.6. |  |  |  | X |  |  |  |
|-----|------|--|--|--|---|--|--|--|

| <b>Table presenting TEACHING PROGRAMME</b> |   |                     |  |
|--|---|---------------------|--|
| <b>No. of a teaching programme</b>         | <b>Teaching programme</b>   | <b>No. of hours</b> | <b>References to learning outcomes</b>           |
| <b>Summer semester</b>                     |   |                     |  |
| <b>Lectures</b>                            |   |                     |  |
| TK01                                       | <p>Impressions and models. Impression materials and trays. Types of gypsum and orthodontic models. Articulators. Determining the occlusal plane. The etiology of malocclusion. General and local factors (dysfunctions, parafunctions, consequences of caries disease and injuries). Clinical examination of the patient. Analysis of facial features. Functional examination of the masticatory apparatus. Functional tests. Analysis of diagnostic models. Metric arc shape analysis. Arch symmetry analysis. Mutual analysis of models. Measuring instruments used for model analysis. Gauges and measuring instruments. Diagnosis of malocclusion. Sagittal, vertical and transversal malocclusions. Dental abnormalities. Radiological research. Analysis of pantomograms. Assessment of bone age and dental age. Cephalometry. Principles of taking cephalometric images. Points and reference lines. Angles and Segments. Selected cephalometric analyzes. Prophylaxis of malocclusion. Simple prophylactic appliances. Treatment of malocclusion - structure, principle of operation of removable and fixed orthodontic appliances.</p> | 7                   | W01, W02, W03, U11, U12                          |
| <b>Seminars</b>                            |   |                     |  |
| TK01                                       | <p>Impressions and models - execution, features of the correct impression and model. Impression materials and trays. Types of gypsum and orthodontic models. Principles of trimming plinths. Articulators - types of articulators, determining the occlusal plane, embedding models in the articulator. Set-up. The etiology of malocclusion. General and local factors (dysfunctions, parafunctions, consequences of caries disease and injuries). Clinical examination of the patient. Family and personal interview. Extraoral examination (face and profile analysis, points, planes, biometric field). Intraoral examination. Functional examination of the masticatory apparatus. Functional tests. Analysis of diagnostic models. Metric arc shape analysis. Arch symmetry analysis. Mutual analysis of models (Angle classes, canine classes, overbite, overjet, disturbances in relation to spatial planes). Measuring instruments used for model analysis. Indicators (Moyers, Droschl, Tonn, Pont, Bolton, Littl, Izard, Masztalerz, segmental analysis of permanent dentition according to Lundström). Measuring</p>                | 10                  | W01, W02, W03, U05, U06, U07, U09, U10, U11, U12 |

|                          |   |    |  |
|--------------------------|---|----|--|
|                          | instruments. Diagnosis of malocclusion. Sagittal, vertical and transversal malocclusions. Dental abnormalities. Radiological research. Analysis of pantomograms. Assessment of bone age (based on the analysis of radiographic images of the hand and wrist as well as telorentgenograms) and dental age (clinical and radiological methods). Cephalometric analysis according to Segner and Hasund. Points and reference lines. Angles and Segments.<br>Face type classification. Assessment of sagittal and vertical harmony. Prophylaxis of malocclusion. Simple prophylactic appliances. Treatment of malocclusion - structure, principle of operation of removable and fixed orthodontic appliances. |    |  |
| <b>Practical classes</b> |   |    |  |
| TK01                     | Practical application of the acquired theoretical knowledge during clinical exercises in patients.  | 25 | W01, W02, W03, U01, U02, U03, U04, U05, U06, U07, U08, U09, U10, U11, U12, U13, U14, U15, K01, K02, K03, K04 |
| <b>Simulation</b>        |   |    |  |
|                          |   |    |  |
| <b>E-learning</b>        |   |    |  |
| TK01                     | Stages of bite development in deciduous and permanent dentition. Principles of orthodontic prophylaxis in various stages of a child's development. Malocclusion - classification, etiology, diagnosis, differentiation. Prophylaxis of malocclusion. Simple prophylactic appliances. Treatment of malocclusion - structure, principle of operation of removable and fixed orthodontic appliances.   | 3  | W01, W02, W03, U11, U12  |

**Booklist**

Obligatory literature:

1. M.T. Cobourne, A.T. DiBiase: Handbook of Orthodontics. Elsevier 2015

2. Moyers, Robert E. Tytuł Handbook of orthodontics for the student and general practitioner. 3 ed. Chicago; London: Yearbook Medical Publ., 1973

Supplementary literature:

1. Jeffrey P. Okeson: Managment of Temporomandibular Disorders and Occlusion, June 2007, ISBN: 0323046142

2. Mitchell Laura: An introduction of ortodontics. 2007

**Normy procedur wymagane do zaliczenia roku:**

|    |   |              |
|----|---|--------------|
| 1. | Clinical examination of the patient. Analysis of facial features. | 2 procedures |
| 2. | Taking an impression.   | 2 procedures |
| 3. | Preparation and development of a diagnostic model.                | 2 procedures |

|     |   |              |
|-----|---|--------------|
| 4.  | Analysis of diagnostic models.  | 4 procedures |
| 5.  | Analysis of the pantomographic image.   | 2 procedures |
| 6.  | Cephalometric analysis of the lateral distance photo of the head.   | 1 procedure  |
| 7.  | Assessment of dental age on the basis of X-rays and diagnostic models.  | 1 procedure  |
| 8.  | Assessment of bone age on the basis of X-rays.  | 1 procedure  |
| 9.  | Preparation of an orthodontic preventive and therapeutic plan.  | 1 procedure  |
| 10. | Conducting treatment to prevent malocclusion in the period of primary dentition and early replacement of the dentition. | 1 procedure  |
| 11. | Treatment with a simple orthodontic appliance.  | 1 procedure  |
| 12. | Provision of first aid in the event of damage to the orthodontic appliance.   | 1 procedure  |

| <b>Student's workload</b>  |                        |
|--|------------------------|
| Form of student's activity<br>(in-class participation; activeness, produce a report, etc.) | Student's workload [h] |
|  | Tutor                  |
| Contact hours with the tutor   | 45                     |
| Time spent on preparation to seminars/ practical classes                                   | 10                     |
| Time spent on reading recommended literature   | 10                     |
| Time spent on writing report/making project  |                        |
| Time spent on preparing to colloquium/ entry test  |                        |
| Time spent on preparing to exam  | 5                      |
| Other .....  |                        |
| Student's workload in total  | 70                     |
| <b>ECTS credits for the subject (in total)</b>   | <b>2</b>               |
| <b>Remarks</b>   |                        |
|  |                        |

\* Selected examples of methods of assessment:

EP – written examination

EU – oral examination

ET – test examination

EPR – practical examination

K – colloquium

R – report

S – practical skills assessment

RZC – practical classes report, incl. discussion on results

O – student's active participation and attitude assessment

SL – lab report

SP – case study

PS - assessment of student's ability to work independently

W – entry test

PM – multimedial presentation

other...