

## COURSE SYLLABUS

### Semmelweis University Faculty of Dentistry, Dentistry

**Name of the course:** Gnathology

**Credit value:** 3

**Lessons (*in hours in the whole semester*):** 3 **from this,** lectures: 0 **practicals:** 2 x 45 min

**seminars:** 1 x 45 min

**Type of the course:** compulsory

**Semester in which it is announced according to the curriculum:** autumn

**Frequency of announcement (*per semester or year*):** year

**The responsible educational and research organizational unit for teaching the subject:** Department of Prosthodontics

**Academic year:** 2025/2026 I. Semester

**Subject (Neptun) code:** FOKOFPK367\_1A

**Lecturer of the course:**

Prof. Dr Peter HERMANN, Professor, director of Department of Prosthodontics

**Contact:**

Semmelweis University Faculty of Dentistry Department of Prosthodontics

[hermann.peter@semmelweis.hu](mailto:hermann.peter@semmelweis.hu)

Opening hours of the Secretariat:

Monday: 8:00 – 12:00

Tuesday: 8:00 – 12:00

Wednesday: 8:00 – 12:00

Thursday: 8:00 – 12:00

Friday: Closed

Students are welcomed only in the office hours. Please be aware of it!

**The goals and place of the course in regards to the education of dental students:**

Teaching the relationship between all the components of the masticatory system in normal function, dysfunction, parafunction, including the morphological and functional features of contacting surfaces of opposing teeth and restorations. Diagnosis and treatment of occlusal trauma and dysfunction, and other temporomandibular joint and muscle function disorders.

**Location of the course (*address of lecture hall, seminar room etc.*):**

Seminars: Dr. Árkövy József lecture hall (1088 Budapest, Szentkirályi street 47. groundfloor) and Dr. Varga István classroom (1088 Budapest, Szentkirályi street 47. 2<sup>nd</sup> floor)

Practice: Room 213 and 214 (1088 Budapest, Szentkirályi street 47. 2<sup>nd</sup> floor)

**Competences acquired by completion of the course:**

Teaching the relationship between all the components of the masticatory system in normal function, dysfunction, parafunction, including the morphological and functional features of contacting surfaces of opposing teeth and restorations. Diagnosis and treatment of occlusal trauma and dysfunction, and other temporomandibular joint and muscle function disorders.

**Pre-study requirements and prerequisites of course registration and completion, in case of a multi-semester subject, the standpoint of the educational-research unit on the concurrent subject registration and on the requirements of permission thereof :**

Restorative Dentistry and Endodontics I., Prosthodontics I., Oral Diagnostics

Concurrent subject registration is not possible.

**Number of students required for announcement of course (*min.*, *max.*), method of selection:**

In accordance with the number of 4<sup>th</sup> year students.

**Method of course registration:**

Neptun system

**Detailed course/lecture description<sup>1</sup>:** *(to facilitate credit recognition in other institutions)*

**The theme of the seminars:**

1. Introduction to the subject, introductory seminar
2. Online moodle learning module: Introduction into the Anatomy and Physiology of the Stomatognathic System. Mandibular Positions: Rest Position, ICP, CR, CO
3. Seminar material which requires personal attendance: Introduction into the Anatomy and Physiology of the Stomatognathic System. Mandibular Positions: Rest Position, ICP, CR, CO
4. Online moodle learning module: Mandibular Movements: Rotation and Translation Opening and Closing, Protrusion-retrusion, Excentric Movements and Border Movements
5. Seminar material which requires personal attendance: Mandibular Movements: Rotation and Translation Opening and Closing, Protrusion-retrusion, Excentric Movements and Border Movements
6. Online moodle learning module: Simple Hinge, Average Value Articulators, Fully Adjustable Articulators Mounting with the Bonwill Triangle. Individual mounting, the Use of Face-bow.
7. Seminar material which requires personal attendance: Simple Hinge, Average Value Articulators, Fully Adjustable Articulators Mounting with the Bonwill Triangle. Individual mounting, the Use of Face-bow.
8. Online moodle learning module: Registration of Maxillomandibular relationships
9. Seminar material which requires personal attendance: Registration of Maxillomandibular relationships
10. Online moodle learning module: Adjustment of the Articulator.
11. Seminar material which requires personal attendance: Adjustment of the Articulator
12. Online moodle learning module: Gnatological Aspects in the Manufacturing of Prosthetic Appliances. Axiography, Digital Analysis of Movements and the Arcus Digma System. Temporomandibular disfunction, orofacial pain
13. Seminar material which requires personal attendance: Gnatological Aspects in the Manufacturing of Prosthetic Appliances. Axiography, Digital Analysis of Movements and the Arcus Digma System. Temporomandibular disfunction, orofacial pain
14. Consultation

**Practices:**

1. Impression taking in pairs
2. Waxing up the occlusal surface on molar and premolar teeth
3. Waxing up the occlusal surface on molar and premolar teeth
4. Blended Learning
5. Examination of temporomandibular joint movements
6. Examination of the temporomandibular joint in patients without TMD
7. Setting up the facebow
8. Mounting of the upper cast into the articulator
9. Mounting of the lower cast into the articulator
10. Programming of articulators
11. Arcus Digma
12. Blended Learning
13. Blended Learning
14. Consultation

**Courses (*compulsory and obligatory elective*) which in part or entirely overlap the topics of above course:**

General Dental Materials

Odontotechnology and Prosthodontics Preclinical Course I – III.

Prosthodontics I – V.

Clinical Dentistry I – II.

Gnathology

**The application of artificial intelligence in teaching of the course:**

The use of artificial intelligence is not allowed during the practices, demonstrations and exams. The use of artificial intelligence in the dental machine/devices used for patient care is allowed. Artificial intelligence may be used to assist students' preparation/learning.

**Special academic work required for completion of the course<sup>2</sup>:**

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**Attendance on practices and lectures, replacement in case of missed sessions:**

Attendance at seminars requiring personal attendance and the weekly practices is compulsory. Absences from any title, even with a doctor's certificate, cannot exceed 25% of the number of seminars requiring personal attendance/weekly practices.

No more than a 25% of the practices are allowed to be missed for any reason – not even with a doctor's note – otherwise the semester will not be accepted. Doctor's notes can only be accepted after an individual evaluation. The medical notes will be sent back to the supervisory section of the issuing medical institutions for verification.

If there are 6 seminars requiring personal attendance per semester, the maximum number of absences from seminars requiring personal attendance is 1.

If there are 7 seminars requiring personal attendance per semester, the maximum number of absences from seminars requiring personal attendance is 2.

A student is considered to be late from the practices if he/she arrives no more than 15 minutes later than the time set by the timetable. These late arrivals are marked in the attendance sheet and if someone is late three times within a semester, it will be considered an absence. However, if someone is more than 15 minutes late from the practice, it will be already registered as an absence, but the student will be allowed to attend the practice.

The use of cell phones during the practices is forbidden. (Unless the patient is photographed.) If the student uses his / her mobile phone despite the warning of his / her instructor, he / she will be not allowed to continue the practice and will have to leave the room immediately. This is considered as an absence, which is included in the number of absences allowed during the semester. During the practices, students can use tablets, notebooks, and small laptops to take notes.

There is no possibility to replace the seminars and the practices.

Students must arrive for the lectures on time, otherwise they will disturb the lecturer and the audience. No extra seminars will be provided for missed sessions.

**Method of checking acquired knowledge during the study period<sup>3</sup>:**

6 topics per semester are covered in the seminars. The seminars are taught in a blended learning format. 50% of the seminars are online, in weekly rotation, the other 50% is in the form of small group (max. 25-30 participants) classroom training requiring personal attendance.

The online learning module always precedes the personal seminar within the same subject area.

The teaching material corresponding to the topics of the seminars is available online in moodle platform.

The course material is assessed and checked during the six two-week seminar blocks using a mobile phone application (Voovo). During each block, groups of questions are opened 3–5 times, each time containing 8–15 questions. These questions may reappear throughout the block; incorrectly answered questions are repeated more frequently by the app. Once a question is answered correctly, the previous incorrect attempt will not reduce the final consistency score.

However, the Voovo application also contains a “**Knowledge Score**”, which measures the proportion of correct versus incorrect answers. If this score drops below a critical threshold, students will not be eligible to receive the highest marks—even if their consistency score remains high. As a result, each grade level is defined not only by consistency, but also by a minimum required level of knowledge.

The application sends a push notification to the user's device whenever a new question group becomes available. Until the questions are answered, students also receive daily reminder notifications. Once the two-week block

expires, it is no longer possible to answer the questions.

### Scoring and Conversion Formula

Student performance is measured through an average percentage result recorded in the Voovo app (**Consistency Score**). This semester average is converted into a partial seminar grade using the following formula:

Grade	Consistency Score	Minimum Knowledge Score
1	0% – 49%	min. 0%
2	50% – 63%	min. 40%
3	64% – 76%	min. 50%
4	77% – 89%	min. 60%
5	90% – 100%	min. 65%

The results obtained in the seminars (based on the results achieved in the Voovo application) account for 50% of the end-of-semester result, in addition to the partial result obtained in the practical training, which accounts for the practical assessment of the semester.

### Impact on Final Examination

Students whose average scores in the Voovo application (average of Voovo performance over several semesters) are within the top 5 percentage of their class, get the score of 5 (excellent) for one item they have chosen from the drawn ones during the kollokvium.

### Practice grade:

During the semester, practical work is assessed by evaluating the waxing of one premolar and one molar tooth (grade 1-5, time spent: 4x45 minutes) and the activity shown during the practical sessions, with at least 50% completion required for a pass.

At the end of the semester, the student's overall performance will be evaluated on a percentage basis according to the partial grades for each practical work phase and their activity during the practicals.

The requirement for passing the semester is a minimum of 50% in the combined practical and seminar performance.

If the end-of-semester result is below 50%, the department will refuse the signature.

The assessment will be graded as "fail" if the number of absences from seminars/practical work exceeds the permitted 25%.

During the semester, three practical sessions will be held to prepare for the end-of-semester exam. Students who receive the highest total score for their practical activities, wax application exercises, developed topics, and test results (up to a maximum of 30% of the class) may declare one of the exam questions as passed with distinction.

### Requirements of an accepted semester (*signature of the lecturer*):

Attendance at seminars requiring personal attendance and attendance at practices is compulsory. No more than 25%-25% of the practices and the seminars requiring personal attendance are allowed to be missed for any reason – not even with a doctor's note – otherwise the semester will not be accepted.

If there are 6 seminars requiring personal attendance per semester, the maximum number of absences from seminars requiring personal attendance is 1.

If there are 7 seminars requiring personal attendance per semester, the maximum number of absences from seminars requiring personal attendance is 2.

In case of absence is above this number, the semester will not be signed by the faculty, which means - according to the current Studies and Examination Regulation (TVSZ)- that the student can not apply for the exam.

In case of an unsatisfactory final mark, the signature at the end of the semester will be refused.	
<b>Type of the exam:</b> Raised kollokvium. Theoretical exam.(1-5 marks). Failure to pass any part of the examination will result in a fail mark. The use of artificial intelligence is not allowed during the exam.	
<b>Requirements of the exam<sup>3</sup>:</b> Raised kollokvium (1 semester):. The exam is a review of the semester's course material according to the list of items available on the on the clinic website and moodle.  Students whose average scores in the Voovo application (average of Voovo performance over several semesters) are within the top 5 percentege of their class, get the score of 5 (excellent) for one item they have choosen from the drawn ones during the kollokvium.  The use of artificial intelligence is not allowed during the exam.	
<b>Grading of courses<sup>4</sup>. The possibility and requirements of an offered grade:</b> During the semester, three practical exercises are held to prepare for the end-of-semester exam. Students who receive the highest overall score for their practical activities, wax application exercises, developed topics, and test results (up to a maximum of 30% of the class) may declare one of the exam questions as passed with note 5.  Raised kollokvium: oral examination The kollokvium is graded on a scale of 1-5. Oral examination based on theoretical questions.  No offered grade.	
<b>Exam registration:</b> Neptun system, according to the Semmelweis University Study and Examination Regulations	
<b>Rules of repeating exams:</b> Neptun system, according to the Semmelweis University Study and Examination Regulations	
<b>List of textbooks, lecture notes and recommended textbooks, online material:</b> <b><u>Textbooks:</u></b> Mohl, Zarb, Carlsson, Rugh. A Textbook of Occlusion. Quintessence. Chicago.1988. McNeill. Science and Practice of Occlusion. Quintessence. Chicago.1997. <b><u>Suggested:</u></b> J Okeson: Management of Temporomandibular Disorders and Occlusion, 7th Edition,2012, Mosby Hermann Péter, Szentpétery András: Gnatológia (Semmelweis Kiadó, 2018) <b><u>Other study aids:</u></b> Moodle Website of the Department of Prosthodontics Seminar content	
<b>Signature of course lecturer:</b>	 
<b>Signature of head of department:</b>	
<b>Date of submission:</b> September 1. 2025	
<b>Opinion of OKB:</b>	
<b>Notes from the Dean's Office:</b>	
<b>Signature of Dean:</b>	

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<sup>1</sup> Detailed and numbered for each week of theoretical and practical lessons one by one. In an annex, cannot be attached appendix!

<sup>2</sup> Eg. homework, report, midterm exam etc. Topics, dates, method of retake and replacement

<sup>3</sup> List of topics in case of theoretical exam, thematic and method in case of practical exam

<sup>4</sup> Method of inclusion of theoretical and practical exams. Method of inclusion of midterm assessments.