



DANUBE PRIVATE UNIVERSITY
Austria

Examination Regulations for Orthodontics

Qualification: Master of Science (Continuing Education) – MSc (CE)

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Section 1

Programme Content and Purpose of Examination

(1) The programme comprises eight topics:

Topic 1	General biological and medical subjects
Topic 2	Basic orthodontic subjects
Topic 3	General orthodontic subjects
Topic 4	Orthodontic treatment techniques
Topic 5	Multidisciplinary treatments
Topic 6	Specific treatment procedures
Topic 7	Management of health and safety
Topic 8	Office management, administration and ethics

Module	Course type	ECTS credits	WL (h)	SH	Classroom study (h)	Independent study
Module 1	L	17	425	8	85	340
Module 2	L, CT	16	400	7	80	320
Module 3	L, CT	16	400	7	80	320
Module 4	L, CT	13	325	5	60	265
Module 5	L	4	100	1	15	85
Module 6	L, CT	12	300	4	40	260
Module 7	L	2	50	1	10	40
Module 8	L	5	125	1	14	111
Case presentation		15	375			375
Master's thesis		20	500			500
Total		120	3000	34	384*	2616

*40% of classroom-based teaching (which corresponds to 6 ECTS credits) is provided online (i.e. students are required to remotely attend live classes). Students are informed in a timely manner before the start of each semester as to which classes are held in person and which are held online. DPU reserves the right to make amendments in exceptional cases and shall inform students of such amendments as swiftly as possible.

Key:

L = lecture

CT = clinical training

WL = workload

SH = semester hours

ECTS = European Credit Transfer System

1 ECTS credit = 25 h workload

In the course of the programme, students shall:

- write a Master's thesis (cf. Appendix 1 "Fundamentals of Writing a Master's Thesis"), in the form of a scientific paper, and
- submit a total of 12 case reports on cases in which the student independently planned and performed the treatment of various anomalies, including under instruction (cf. Appendix 2 "Content and Structure of Case Presentation/Documentation").

(2) The programme is designed to provide continuing interdisciplinary, occupational and scientific education in the field of orthodontics. Students who successfully complete the programme receive the academic title of Master of Science (Continuing Education), which can be abbreviated to "MSc (CE)".

(3) Examinations in the context of these Examination Regulations include all examinations during and final examinations on the postgraduate programme in Orthodontics for the academic title of Master of Science (Continuing Education), which can be abbreviated to "MSc (CE)".

(4) Examinations are designed to permit the differentiated assessment of students and to establish whether a candidate is capable of dealing with problems relevant to the examination fields and treatment catalogues, performing to a reasonable standard and using scientific instrumentation. It aims to examine students' judgement and ability to reflect critically on scientific and professional practice and integrate issues into broader contexts.

(5) The type and scope of the examination materials is determined by the contents of the Study Regulations and the programme curriculum.

Section 2

Master's Degree

Following successful completion of all examinations in accordance with these Examination Regulations, students receive the academic title of Master of Science (Continuing Education), which can be abbreviated to "MSc (CE)".

Section 3

Admission Requirements and Qualifications

- (1) An internationally recognised undergraduate degree in dentistry and a licence to practice dentistry are requirements for admission to this postgraduate programme. Applicants shall have worked as a dentist for at least two years after obtaining their licence and prior to admission to the programme.
- (2) The programme is organised in such a way that it can be completed alongside and integrated with students' professional practice over six semesters. Applicants therefore require access to a practice or clinic (i.e. the opportunity to treat patients) in order to apply the knowledge gained and methods demonstrated on the programme in practice to a sufficient extent and to complete the case presentation requirements. Applicants shall credibly demonstrate this.
- (3) Applicants shall also submit a complete Curriculum Vitae (CV) together with their application form, including details and/or evidence of advanced training in the field of orthodontic dentistry.
- (4) Admission is subject to the availability of places on this postgraduate programme. The maximum number of places available in each programme intake is defined by the Academic Director with due regard for educational and organisational aspects and the feasibility of clinical training.
- (5) The Rectorate of DPU is responsible for student admissions in accordance with Section 60(1) of the Austrian Universities Act (Universitätsgesetz – UG 2002). The Academic Director decides whether each applicant meets the entrance requirements.

Section 4

Programme Duration

- (1) The postgraduate programme in Orthodontics for the title of Master of Science (Continuing Education), which can be abbreviated to MSc (CE), is taught alongside students' professional practice, has a duration of six semesters, comprises a total of 120 ECTS credits, and features

lectures and other classes totalling 34 semester hours. The total of 120 ECTS includes submission of a scientific paper (the Master's thesis) and presentation of 12 case reports.

- (2) The total time students spend engaging with course literature, preparing for and following up on classes, and preparing the necessary case reports on cases with different indications is included in the total workload and reviewed in an evaluation.

Section 5

Requirements and Procedure for Admission to Partial and Final Examinations

- (1) Participation in classes is mandatory, with absence permitted only for a compelling reason and subject to the approval of the Academic Director. Students may only sit the final examination if they can demonstrate attendance of 80% or higher across all courses.
- (2) Students sit a test for each course (usually a multiple-choice test). Students require a pass mark of at least 60% across all tests in order to sit the final examination. The tutor responsible for each module shall integrate the students in a programme of oral and practical assessments.
- (3) Students may only sit partial examinations after demonstrating fulfilment of the requirements defined in Section 3. Upon presentation of the evidence specified in Section 3, the applicant is deemed registered for partial examinations in the classes they attend on the programme
- (4) In order to obtain permission to write a Master's thesis, students shall demonstrate fulfilment of the requirements defined in Section 3 and have already earned 30 ECTS credits through partial examinations on the programme.
- (5) Students shall write the Master's theses in accordance with the "Fundamentals of Writing a Master's Thesis" (cf. Appendix 1 to the Examination Regulations).

The Master's thesis serves to qualify students for scientific work. Students shall present the

results of their own scientific investigations, research and analysis in a suitable manner. The Master's thesis entails a workload of 500 hours (= 20 ECTS credits) and may be completed alongside students' professional practice.

Each student is assigned a member of teaching staff as the "supervisor" for their thesis. The Master's thesis and its defence represent an important component of the final examination. Submission of the Master's thesis at least 12 weeks prior to the examination date, and positive assessment of the thesis, are requirements of admission to the final examination.

Students may only reject a Master's thesis topic on one occasion, for a compelling reason and subject to the approval of the Chair of the Examination Board.

If the assessment of a Master's thesis is not performed by programme's Academic Director, the Academic Director shall appoint and forward the thesis to a reviewer for assessment. If a Master's thesis is graded as "not sufficient", it shall be assessed by a second reviewer, who must be either a DPU staff member or another member of teaching staff on the programme. The assessments should be made available no later than four weeks after submission to the reviewer.

Following amendment based on the reviewer's recommendations, the final version of the Master's thesis shall be submitted in triplicate to the Examination Board. Furthermore, the thesis shall be submitted in digital format and in a brief version with a view to potential publication.

Each student presents their Master's thesis as part of their oral examination and undertakes an academic defence of the results before the Examination Board.

- (6) Each student shall submit 12 case reports on cases with different indications, treated either independently or in an assisting role, in digital form at least eight weeks before the final examination date.
 - The cases should pertain to different types of anomaly, including at least one patient with a

skeletal Class II/1 anomaly, one patient with a skeletal II/2 anomaly, and one growing (i.e. child/adolescent) patient with a Class III anomaly. The submitted cases should include one extraction case, one adult patient and, if possible, one patient in the early phase of dental development (i.e. milk dentition or early mixed dentition). The required treatment methods are defined by the programme's Academic Director.

- The scope of diagnostic measures, the quality and informative value of documentation (e.g. models, photographs and X-ray images), and the type and documentation of the treatment process are subject to elevated standards commensurate with the academic title of Master of Science (Continuing Education).
- The description of findings (e.g. model-based findings, intra-oral findings, functional findings, X-ray findings, etc.), anamnesis, treatment plan, treatment process and epicrisis shall be precise, comprehensible and use recognised scientific nomenclature. A differential diagnosis is required in each case prior to the start of treatment in order to clarify the diagnosis.
- Regular checks are required during the treatment process, with current findings compared against the initial findings and the planned treatment objective.
- A comparison between the initial findings and the treatment outcome is a fundamental requirement prior to conclusion of active treatment.
- The Examination Board selects two of the submitted case reports for each student, which shall then be presented and defended before the Examination Board as part of the final examination. The submitted documentation should demonstrate sound orthodontic knowledge and skills.

Students shall comply with the “Guidelines on Content and Structure of Case Presentation/Documentation” (cf. Appendix 2 to the Examination Regulations).

(7) Students shall submit up-to-date confirmation of their licence to practise dentistry.

(8) The Rectorate may permit submission of documents at a later date if the student assures and substantiates that all documents will be submitted by a deadline set by the Rectorate. If, through no fault of their own, a candidate is unable to provide the requisite documents in the prescribed manner, the Academic Director may permit the candidate to submit evidence in a different manner.

(9) Admission to the examination shall be refused if

- 1) the candidate has not fulfilled the admission requirements set out in Subsections 1 to 6,
- 2) the candidate has not fulfilled the admission criteria within one year of the regular period of study,
- 3) the required documentation is incomplete,
- 4) the candidate has been excluded from further study, thereby losing their right to sit the examination, or
- 5) the candidate has failed an examination on the programme and cannot repeat the examination.

Section 6

Recognition of Study Periods and Achievements

(1) Periods of Master's-level study in the same subjects and associated academic and examination achievements at recognised postgraduate institutions may be credited towards this programme unless such study is deemed not to be equivalent.

(2) The Academic Director of the programme shall determine, in conjunction with a competent subject representative, whether the recognition requirements have been met.

(3) The European Credit Transfer System (ECTS) applies to the recognition of prior academic achievements.

Section 7

Final Examination

The final examination comprises the following elements:

1. A written examination (approx. 150–200 questions) on the content of the lectures and seminars in all modules and courses.
2. A technical discussion with the Examination Board, and at least three questions from the module and course catalogue, as part of an academic defence.
3. Presentation and defence of two treatment cases, selected by the Examination Board from the submitted diagnostic and treatment documentation of 12 cases in which the student treated patients with specified indications. These cases should be presented in accordance with guidelines, accompanied by the requisite documentation, and discussed as part of an academic defence.
4. Presentation and defence of the Master's thesis (approx. 20 minutes) as part of an academic defence before members of the Examination Board, outlining
 - the objectives of the Master's thesis,
 - the study design and
 - the thesis discussion and results.

Section 8

Examination Board

- (1) The Rector of DPU shall appoint an Examination Board for each intake of postgraduate programme for the title of Master of Science (Continuing Education), which can be abbreviated to "MSc (CE)", with the Academic Director of the programme serving as Chair of the Examination Board.
- (2) The Examination Board shall include at least one other member as an observer. In addition to the Chair and an observer, two to three further observers may be appointed to the Examination Board. If at all possible, the observers should be teaching staff on the programme. However, any member of academic teaching staff at the Faculty of Medicine/Dentistry at DPU may serve as an examiner in the position of an observer.

(3) The Examination Board ensures compliance with that the provisions of the Examination Regulations. It reports to the Rectorate on the development of examinations and provides input on changes to the Study and Examination Regulations where necessary. With the exception of conducting and assessing examinations, the Rector shall take all decisions that arise. The Rector shall issue examination certificates after reviewing the validity of examination assessments. Examination certificates that could affect a person's rights shall be issued be issued in written form, duly justified and accompanied by an explanation of their right of appeal. Before issuance of a negative decision, the applicant shall have an opportunity to respond, with no format requirements. The Rector of DPU may, in consultation with the Examination Board and after hearing the relevant examiners, lodge an objection in matters relating to examination law.

Section 9

Exclusion due to Personal Involvement; Confidentiality

- (1) Exclusion from deliberations or voting on the Examination Board, and from serving as examiners, may be stipulated in the event of personal involvement.
- (2) Members of the Examination Board, examiners, examination observers and other individuals involved in examination-related matters shall respect confidentiality.

Section 10

Absence, Withdrawal, Cheating and Breaches of Regulations

- (1) An examination shall be deemed to have been graded as "not sufficient" if the candidate fails to attend an examination without a compelling reason, DPU has not received the required work, or the candidate withdraws from an examination without a compelling reason after partial examination has begun.
- (2) Reasons for absence or withdrawal shall be submitted and substantiated immediately and in writing to the Chair of the Examination Board. A doctor's note is required to substantiate

illness; in the event of justified doubt, the Chair of the Examination Board may require a doctor's note from an independent examining doctor or the Medical Officer of DPU.

- (3) If the candidate attempts to influence the outcome of an examination by cheating or through the use of prohibited resources, they shall receive a grade of "not sufficient" for that examination. Bringing prohibited resources into the examination room is considered cheating. Any candidate who significantly disrupts the proper course of an examination may be excluded from continuing the examination by the respective examiner or invigilator, in which case they shall receive a grade of "not sufficient" for that examination.

Section 11

Flaws in the Examination Procedure

- (1) If an examination is proven to have been flawed in a manner that affected the results, upon request by a candidate or *ex officio*, a specific candidate or all candidates shall be ordered to repeat individual parts of the examination.
- (2) Alleged flaws in the examination procedure, or an inability to participate in an examination that comes to light before or during an examination, shall be reported immediately to the Chair of the Examination Board or to the relevant examiner.
- (3) Orders pursuant to Subsection 1 may not be issued more than six months after an examination ends.

Section 12

Assessment of Examinations

- (1) Individual examinations are assessed using the following scale, which features intermediate values to facilitate differentiated assessment:
 - a. "very good" (outstanding performance) = 1.0 or 1.3
 - b. "good" (performance that significantly exceeds average requirements) = 1.7 or 2.0 or 2.3
 - c. "satisfactory" (performance that meets average requirements) =

2.7 or 3.0 or 3.3

- d. “sufficient” (flawed performance that still satisfies requirements) = 3.7 or 4.0
- e. “not sufficient” (significantly flawed performance that does not satisfy requirements) = 5.0
- f. Other grades are not permitted.
- g. Calculation of the total examination grade only takes account of the first decimal place; all other decimal places are ignored and not rounded. The final grades are as follows:
 - h. For an average of 1.5 or better = very good
 - i. For an average of 1.6 to 2.5 (inclusive) = good
 - j. For an average of 2.6 to 3.5 (inclusive) = satisfactory
 - k. For an average of 3.6 to 4.0 (inclusive) = sufficient

(2) The overall grade is calculated as the weighted average of all examination grades. It is comprised of the weighted overall result of the individual tests, the written part of the final examination, the assessment of the specialist discussion (i.e. case documentation and its defence in the academic defence) and the assessment of the Master’s thesis and its defence. The Examination Board may, in consultation with the examiners for partial examinations, permit the award of “pass” or “fail” grades rather than numerical grades. In such cases, these partial examinations are not included in the weighted overall grade.

(3) Oral examinations usually last 40 to 60 minutes. Oral examinations are conducted by one examiner with at least one observer present. The observer prepares summary minutes of the oral examination, which are then signed by the examiner and the observer.

Section 13

Timing of Examinations

(1) Examination on the Master’s programme comprises partial examinations during the programme for all modules as well as the final Master’s examination in accordance with

Section 7. In coordination with lecturers, certain partial examinations for selected courses take place immediately after the respective course.

- (2) The partial examinations during the programme in accordance with Subsection 1 take the form of multiple-choice tests, oral examinations, coursework papers, solo projects, group projects and/or presentations; in the case of group projects, each candidate shall make an identifiable contribution to the project.
- (3) The final examination for the title of Master of Science (Continuing Education) in Orthodontics, which can be abbreviated to “MSc (CE)”, may be taken at the earliest at the end of the sixth semester, and no later than one year after the regular period of study pursuant to Section 5(9)(2).
- (4) If a candidate fails to meet an examination deadline because they have not taken all examinations since their initial participation obligation, they may be granted an extension to permit access to further examination dates if the reasons for missing previous examinations are beyond their control. These reasons shall be substantiated in writing and accompanied by evidence (e.g. a doctor’s note). Applications for extensions due to missing an examination deadline shall be submitted immediately.
- (5) Upon request, DPU shall ensure that deadlines and dates comply with rights to maternity protection periods and granted periods of leave in accordance with the respective provisions.

Section 14

Certificate

- (1) The Chair of the Examination Board and the Rector/Presidium shall issue a certificate confirming that the candidate has passed their examinations, listing the grades achieved in individual examinations and their overall grade, within six weeks of assessment of the final examination.
- (2) The certificate shall be presented to the candidate at the same time as the Master’s certificate

signed by the Rectorate, which confirms conferral of the academic title of Master of Science (Continuing Education), which can be abbreviated to “MSc (CE)”.

(3) A diploma supplement is also issued at the same time.

Section 15

Repeat Examinations

(1) Failed examinations should be repeated on the next available examination date. Each partial examination during the programme can be repeated on two occasions; the Master’s thesis can be repeated on one occasion only.

(2) The Academic Director is responsible for setting the date of repeat examinations, which should be within a six-month period.

(3) Students may not voluntarily repeat an examination that they have already passed.

Section 16

Access to Examination Records

(1) Following completion of each partial examination during the programme, the candidate may access their examination papers, the examiners’ assessments and examination records upon request and subject to organisational practicalities.

(2) Such requests shall be submitted to the Chair of the Examination Board within one month of announcement of the partial examination result.

Section 17

Entry into Force

These Examination Regulations shall come into force on 23 June 2025.

Appendix 1 to the Examination Regulations for Orthodontics

Fundamentals of Writing a Master's Thesis

By writing a Master's thesis, a dentist studying on Master's programme in Orthodontics at Danube Private University (DPU) in Krems demonstrates their ability to examine a specified topic in a scientific manner. In this regard, the Master's thesis is similar to a doctoral (PhD) dissertation. As a rule, a Master's thesis is divided into the following chapters:

1. Introduction
2. Literature review
3. Problem formulation
4. Materials and methods
5. Results
6. Discussion
7. Summary

The *introduction* serves to briefly outline the problem examined in the Master's thesis (in one or two pages).

The introduction ends by specifying the objective of the academic examination (i.e. "The aim of this study was...") and is continued in the summary.

The *literature review* should collate existing relevant literature pertaining to the topic and present it in a sensible order (i.e. chronological, alphabetical or divided into sub-topics). This up-to-date literature review must elucidate the insights produced into the thesis topic to date.

Writing a Master's thesis requires students to make contact with (nearby) libraries of university dental clinics and other sources. After agreeing terms with these institutions, students can consult up-to-date textbooks to see whether they contain information on the thesis topic. A well-founded textbook will generally contain references to more detailed literature. This enables students to gain a very clear picture of state of knowledge in the examined topic.

Students should not refer to sources that are over 20 years old. Students should abbreviate literature in line with the recommendations of the German Society of Oral and Maxillofacial Surgery (DGZMK), which are available online, listing the first authors in alphabetical order or in the order in which they are referenced in the text.

New media (e.g. online sources, MEDLINE, PubMed, Cochrane, etc.) may be used as literature sources. However, students will have to locate the literature sources they contain in the university library, read the referenced articles in full and note down the insights gained.

The ***materials and methods*** section should list all the resources utilised by the student in their examination of the topic. When working with patients, students should specify the patient cohort in more detail in this section as well as the investigation methods applied. Any instruments and devices used in the investigation shall also be specified and, if necessary, described in this section. Students should also document how they have analysed the collected data.

The ***results*** section should present the acquired data and their findings in a clear and comprehensible manner. The data and findings should be presented in the form of clear diagrams, graphics, tables and illustrations (with clinical images presented in colour).

In the ***discussion*** section, the student should interpret the data they have acquired, critically examine their findings and discuss these results in the context of existing literature and with regard to their relevance. The discussion section should yield an advance in knowledge that other researchers can build on.

The ***summary*** should briefly present the overall paper, including the insights generated in the project (in a maximum of two pages). The Master's thesis may not be less than and should not be significantly longer than 30 pages in length (not including the bibliography, summary and supplementary photos and tables, etc.).

The thesis is concluded by listing all support received from third parties (e.g. with the literature review or with formulating the thesis).

It shall include an assurance that the work has been produced and written on the basis of the student's own ideas.

Topical overlaps between the Master's thesis and a dissertation previously authored by the student are not permitted.

The final element in the Master's thesis is a CV in tabular format.

Master's thesis topics are usually clinical issues. For example:

1. A problem is presented based on literature research alone, with a solution developed based on the insights gained from the literature.
2. An epidemiological study to document the condition of patients who have not undergone orthodontic treatment (based on a PAR index or examination of the temporomandibular joint or tooth decay)
3. Development of a new treatment method and documentation of its outcomes in practice.
4. A review of the effects of a recall (reminder) system after conclusion of treatment and stabilisation.
5. An investigation into materials with regard to treatment success.
6. Development of a novel instrument and experience of its practical application, e.g. use of MRI for temporomandibular joint disorder compared to clinical symptoms and instrumental analysis.
7. Investigation and use of modern diagnostic systems to identify pathological changes, with a review of treatment success and progress check-ups.

These topics are just a few suggestions. Students are also free to propose topics for their Master's thesis to the Examination Board. In any case, each student shall submit a definitive outline of their Master's thesis before starting to write it. The student should also attach a CV outlining their education and professional development to date, including the topics of any past dissertations and theses they have written.

The student shall present their Master's thesis as part of the oral final examination and defend the results.

Following revision based on the reviewer's recommendations, the final version of the Master's thesis shall be submitted in triplicate to the Examination Board. Furthermore, it shall be submitted in digital format and in a brief version with a view to potential publication.

Appendix 2 to the Examination Regulations for Orthodontics

Guidelines on Content and Structure of Case Presentation/Documentation

Each student shall submit twelve case reports on patients they have treated either independently or under instruction.

These cases should pertain to different types of anomaly, including at least one patient with a skeletal Class II/1 anomaly, one patient with a skeletal II/2 anomaly, and one growing (i.e. child/adolescent) patient with a Class III anomaly. The submitted cases should include one extraction case, one adult patient and, if possible, one patient in the early phase of dental development (i.e. milk dentition or early mixed dentition).

Orthodontic treatment is a long-term process

Comprehensive documentation of the findings in patient examinations is **fundamental** for diagnostic and treatment planning. It is also necessary in order to monitor treatment progress and for stabilisation planning, including prognostic and epicritic assessment.

Precisely documented ongoing diagnostic investigation is a requirement of patient-friendly orthodontic treatment likely to achieve success.

The scope of diagnostic measures, the quality and informative value of documentation (e.g. models, photographs and X-ray images), and the type and documentation of the treatment process are subject to elevated standards commensurate with academic title of Master of Science (Continuing Education).

The description of findings (e.g. model-based findings, intra-oral findings, functional findings, X-ray findings, etc.), anamnesis, treatment plan, treatment process and epicrisis shall be precise, comprehensible and use recognised scientific nomenclature. A differential diagnosis is required in each case prior to the start of treatment in order to clarify the diagnosis.

This makes it possible to identify the necessary treatment steps and determine the most favourable schedule for the required treatment steps.

Regular checks are required during the treatment process, with current findings compared against the initial findings and the planned treatment objective. Ongoing diagnostic investigation makes it possible to determine and objectify whether a treatment is proceeding according to plan and to implement corresponding diagnostic and treatment steps.

A comparison between the initial findings and the treatment outcome is a fundamental requirement prior to conclusion of active treatment.

This is associated with a prognostic assessment of the type, scope, extent and duration of stabilisation measures. A final diagnostic assessment should be conducted immediately before or upon conclusion of stabilisation measures. The type and scope of diagnostic investigation depends on the severity of the clinical picture and the treatment progress. Any dental or preventive treatment required following conclusion of orthodontic treatment shall be identified and initiated.

Students seeking to obtain the title of Master of Science (Continuing Education) are expected to perform diagnostic investigation and documentation of findings during treatment not only in accordance with but exceeding basic dental standards, such that their documentation and diagnostic investigation permits insight into the indicated diagnostic and treatment steps at all times.

Planning models

Planning models shall precisely depict all teeth that have erupted or are in the process of erupting as well as alveolar processes (including tubers and retromolar areas), the gingivobuccal fold and the oral frenums. They must be free from excess plaster that interferes with examination of the occlusion; feature three-dimensional orientation based on the occlusal plane and median raphe; be trimmed to the tuber level; and, when positioned on the reverse sides, clearly replicate habitual

intercusation without wax bite registration and, in the case of cranial-joint-related mounting, replicate the centric relation.

Note:

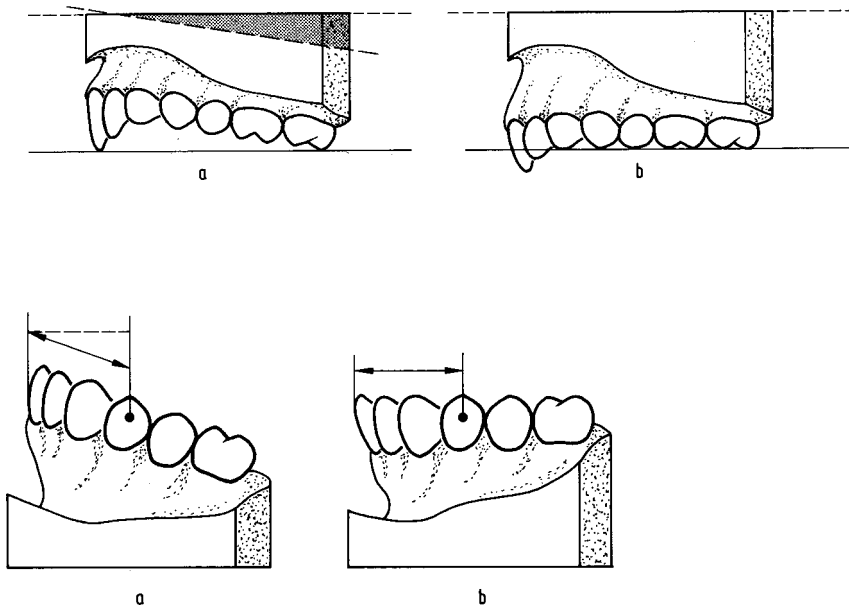
Working and technical models are not planning models.

Upper jaw

The occlusal plane can be defined as:

- a. The plane across cusp tips based on the mesiobuccal cusp 4+4, both at 5+5, the mesiopalatal cusp 6+6, or
- b. The plane connecting as many cusp tips as possible across the posterior teeth (canines to molars) in the upper jaw – always in the upper jaw.

1. The model base should be planed parallel to the occlusion plane.

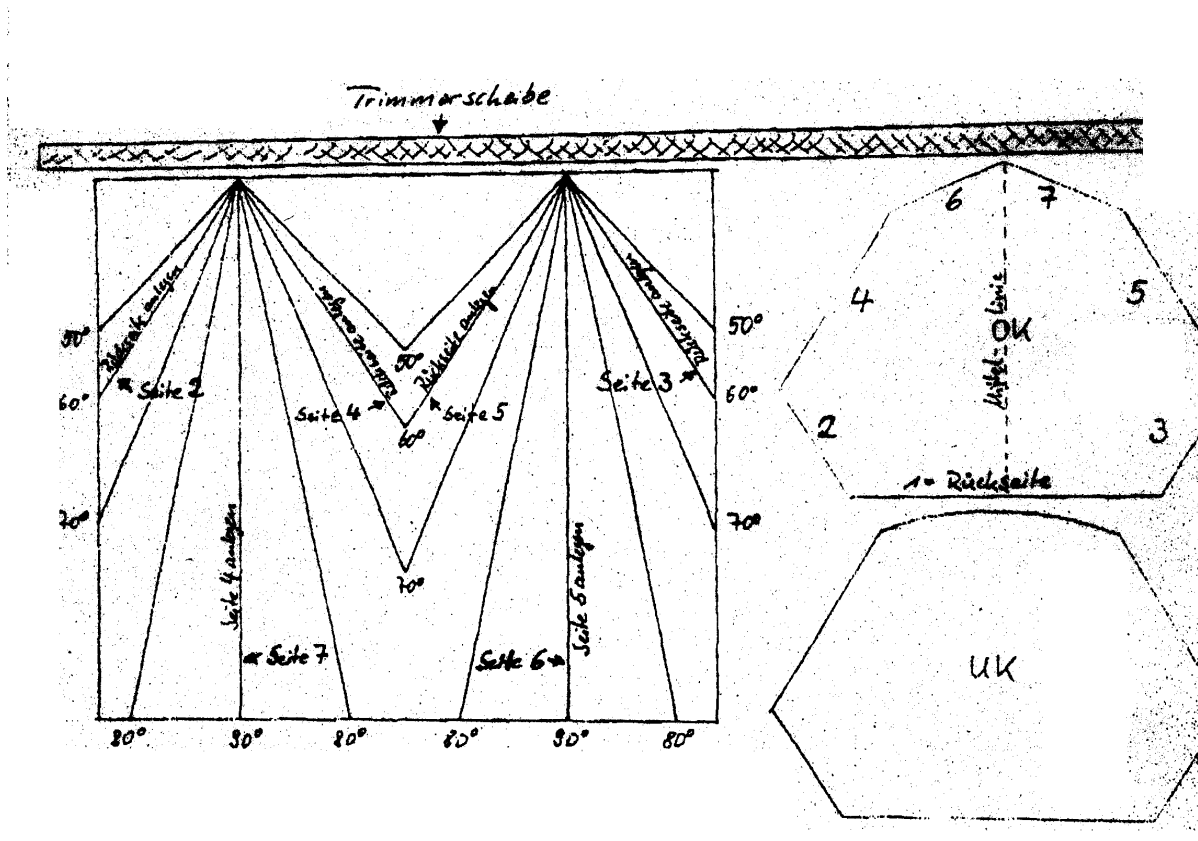


2. On the reverse of the upper jaw model: Mark the mid-line (median raphe plane) and the vertical either through both (if possible) or the dorsal tuber point. (Use a geometry set square!)

3. Trim sides 2 and 3: Align the rear side with the 120° marking (outer marking).

4. Trim sides 4 and 5: Align the rear side with the 60° marking (inner marking).

Trim sides 6 and 7: Align sides 4 and 5 with the 90° marking and grind down to the middle marking (= extension of the mid-line on the model in front of the central incisors).

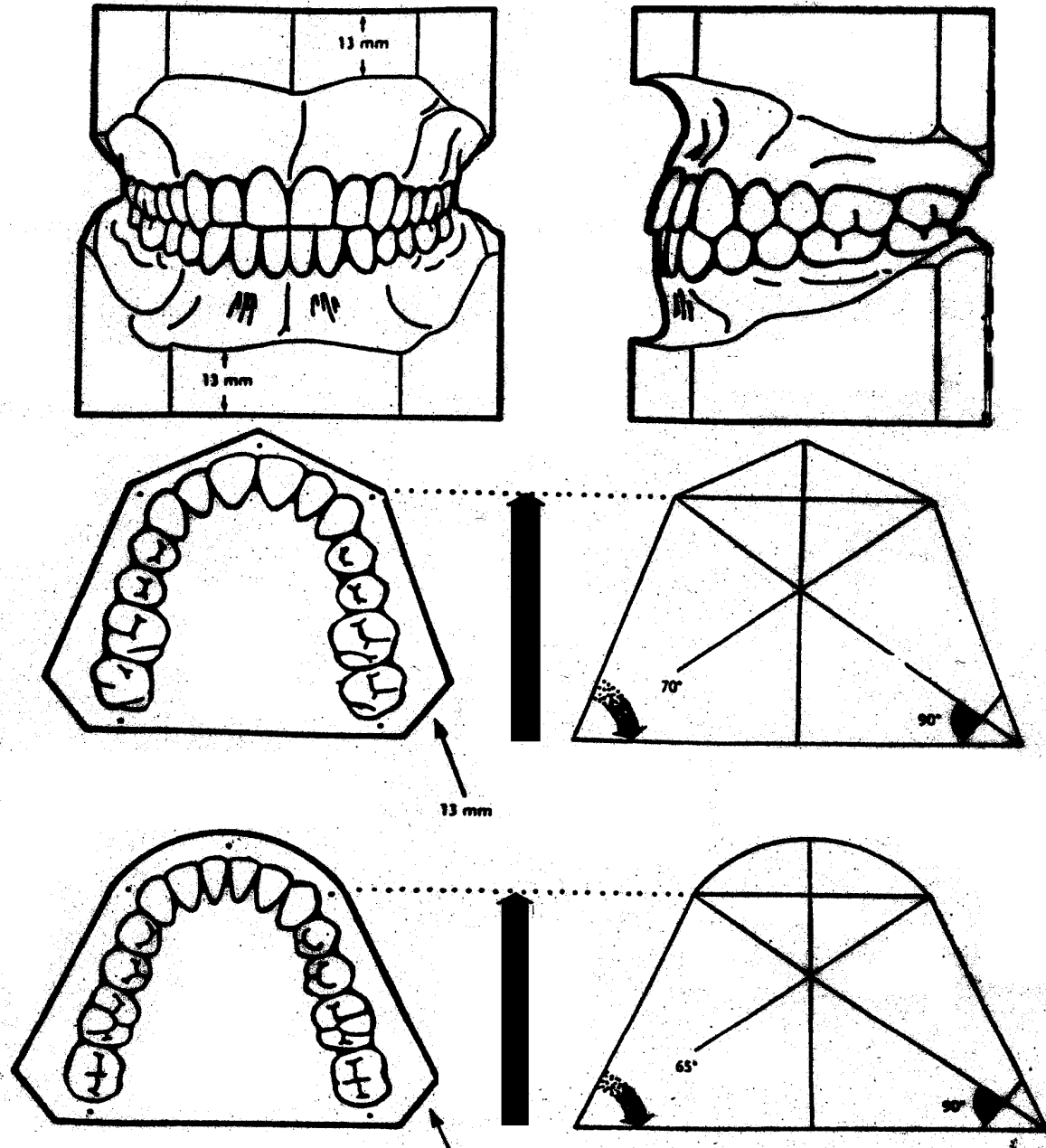


Lower jaw

1. Place check bite on the upper jaw model and mark a circle with a total height of 6 cm.
2. Place the lower jaw model with the checkbite on the model. Firstly, trim the reverse side (with

the upper jaw model on the trimming table), then trim the elevation (with the reverse sides of the upper and lower jaw models on the trimming table).

3. Trim all sides of the lower jaw model (with the upper jaw model on top and the lower jaw model on the bottom; grind until the sides of the upper jaw model are in contact with the trimmer disc). Finish the front tip (i.e. grind down and round off the centre of the upper jaw model).



In keeping with standard practice in international companies, initial models (with the upper and

lower jaws kept separate) should be marked with a red sticker, interim models with a blue sticker, and final models with a green sticker.

Photographs

Photographs should be at least 50 x 50 mm, which ensures both reliable evaluation of orthodontic aspects and assessment of graphic representation. Photographs must be properly axially aligned and show the current clinical situation. Photographs of the same patient should be standardised as far as possible to permit comparison of their status at different points in time.

Photographs are subject to the following requirements:

1. Quality-oriented, standardised facial photography, either in black and white or in colour.
2. The patient's head should be carefully aligned in all three spatial planes and the Frankfort horizontal plane.
3. A lateral view, with the face turned to the left; serious expression; closed lips with clearly visible muscular imbalances and disharmonies.
4. A front-on view with a serious expression.
5. A side-on view and/or a front-on view with open lips (if desired).
6. A front-on view with a smiling expression (if desired).
7. Clear background.
8. Quality-oriented, clearly identifiable facial contours; shadow-free background.
9. Eyes directed straight ahead.
10. Eyes open and looking ahead; glasses should be removed.







Photographs should be labelled with the patient's forename, surname and date of birth, and the date the photograph was taken.

We recommend using a camera fixed on a tripod and defining a fixed point for positioning the patient. Extraoral photographs should be taken at a distance of 1.1 m. Intraoral photographs should be taken at a distance of 0.55 m. For extraoral photographs, we recommend using a studio flash kit, a flash kit with a diffuser or an indirect flash kit to avoid shadows and the “red-eye” effect. Like models, initial photographs should be marked with red stickers, interim photographs with blue stickers, and final photographs with green stickers. Maximal intercuspation is used for facial photographs. Intraoral photography uses both habitual occlusion from the front and from the side as well as angled views of the upper and lower jaws. It is important to ensure that the photographs to depict lateral occlusion are taken at a right angle to the buccal surfaces of the posterior teeth if possible. If the perspective is too skewed, the resulting photographs could be misleading. Three-quarter profiles and *en face* photographs with the patient's head in a natural position can serve as valuable supplementary materials.

X-ray images

The scope of X-ray diagnostic investigation shall correspond to the requirements of each specific case. As a fundamental rule, all X-ray images shall be taken in accordance with the Austrian General Radiation Protection Regulation (Allgemeine Strahlenschutzverordnung – AllgStrSchV) and using standardised X-ray technology, with no imaging or development-related flaws.

X-ray imaging for diagnostic investigation of the patient's initial situation and planning of

orthodontic treatment usually includes:

A. An overview image of the bite and the relevant bone structure, in the form of panoramic imaging, with analysis.

B. A lateral X-ray image with tracing and analysis. The X-ray image should usually be taken with maximal intercuspation. Exceptions include forced bites. A lateral X-ray image of the skull is required, with as few exceptions as possible. This image should be taken with maximal intercuspation (with the exception of forced bites) and feature a contrast that permits cephalometric analysis, specifically subsequent determination of anterior tooth inclination, basal mandibular relationships and muscle/tissue development. A written analysis and tracing must be attached to the image. The images specified above should be repeated as necessary for ongoing diagnostic investigation, depending on the clinical picture and treatment progress. At least three lateral X-ray images should be superimposed in order to determine treatment-related and growth-related changes.

1. Skull base angle. The superimposition technique depends on the cephalometric analysis used. When using S-N, images are overlaid along S-N in S. When using N-Ba (Ricketts), images are overlaid along the line in CC.

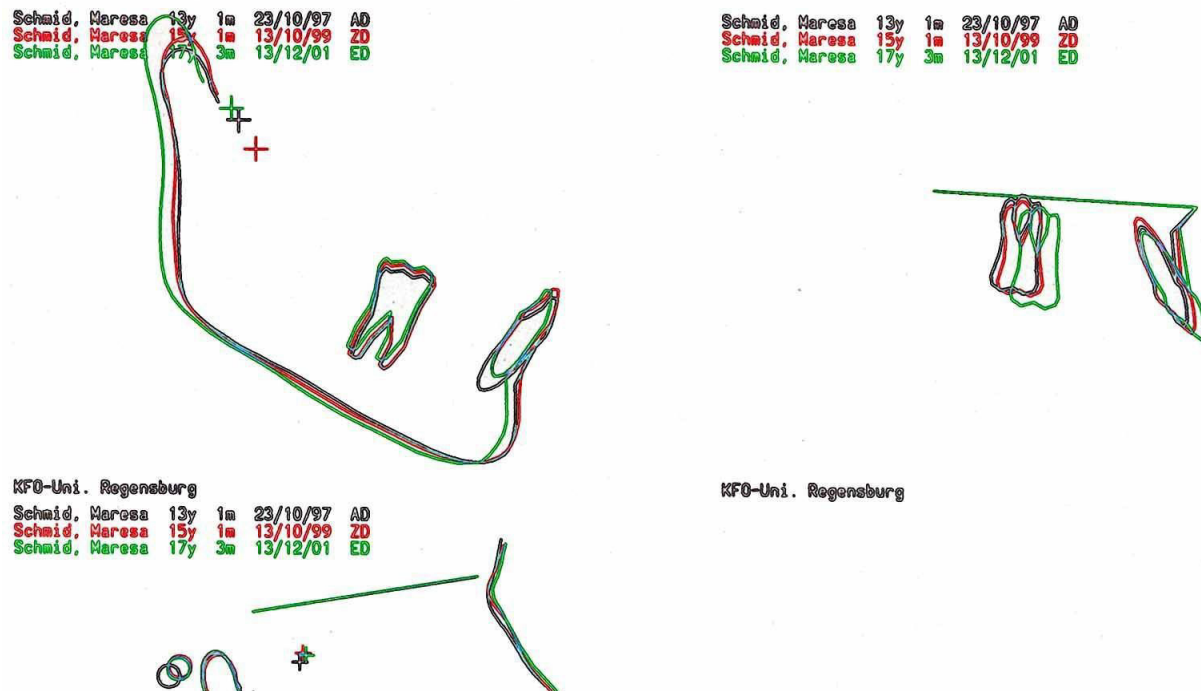
2. To determine tooth movements in the upper jaw, align along NL in Spina nasalis ant. To determine growth (Ricketts), align along facial plane in N and new menton. Then sketch OK without A-point. Then N-Ba in N and, taking consideration of the treatment period, add the A-point.

3. Lower jaw: To detect tooth movements, on ML and covering inner anterior symphysis structure of the growth along the corpus and condylar axis.

All images and sketching, including superimposed images, should be colour-coded as follows:

red = initial situation blue = interim analysis green = final analysis

Further X-ray imaging (e.g. images of individual teeth, bite images, carpal images, images of the temporomandibular joint, and other imaging techniques) may be required in specific cases.



Case presentation structure

Principle: Work “from the outside in” – that is, from general information to detailed analysis.

1. Reasons for consultation; motivation; patient’s age; any conspicuous abnormalities
2. Extraoral findings; in the case of infants and adolescents provide information on their (physical, psychological and biological) development

En face: Skull type (e.g. dolicho, brachy)

Vertical harmony; symmetry; lip posture; musculature; other dysfunctional and parafunctional indications

Profile: Convexity; naso-facial angle; profile form; facial coherence; naso-labial angle; lip relation; dysfunctional and parafunctional indications

3. Intraoral findings, supplemented with orthopantomographic findings if necessary.

Tooth “age”; tooth care and condition; general impression of dental care; sagittal step; vertical overbite; space conditions in the arches; three-dimensional bite analysis; details on central relation and habitual occlusion; free mandibular movement; angled teeth due to grinding; other dysfunctional and parafunctional indications (e.g. related to the tongue, cheeks, lips, or when speaking or swallowing, etc.) and any CMD-related issues

X-ray imaging: OPT primarily used in relation to: hyperdontia or hypodontia; bacterial development; tooth age; tooth care and condition; parodontitis; maxillary sinuses, etc.

Lateral X-rays: Facial type; bite position; vertical line; growth type; incisor positioning; muscle/tissue profile

Summary of findings

Diagnosis or “problem list” with corresponding priorities

Treatment steps and systematic sequence of corrective measures and schedule