



Orthodontics

School of Dentistry

Integrated Dental Practice 1

Third Year DMD

Semester 1

Orthodontics 2

2026

DENT5310 Orthodontics Module Guide

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ORTHODONTICS 2

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Orthodontic Post-Graduate Students

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DENT5310 – ORTHODONTICS 2

SEMESTER 1

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This is a new version of the Orthodontics Module, within a new Unit - Integrated Dental Practice 1. This Orthodontic Module Guide is accurate at the time of publication. It is possible that changes in the Module Guide may be required to accommodate staffing availability, resources or unforeseen changes that may occur in the Unit - Integrated Dental Practice 1.

## I. HOW YOU DO IT

### A. The Course

This course builds on the knowledge you have acquired about human growth and development to:

1. give you a perspective on orthodontic problems with special reference to their definition, prevalence and etiology;
2. teach you diagnostic procedures for developmental problems, so that you can distinguish skeletal from dental components of these conditions and will be prepared to sort patients by the difficulty and severity of their problems;
3. provide an introduction to clinical treatment of children. This includes learning the procedures in treating a child in the orthodontic clinic, the actual diagnostic work-up of your first child patient, and participation in appointments in which treatment is planned.

At the commencement of this unit, it is assumed that the student has a working knowledge of the 2nd Year DMD Growth and Development unit. Students should be able to:

- Outline the graphs for average somatic growth changes from birth to adulthood, describing the impact of early and late development, gender

effects and factors which may affect the growth patterns, timing and rates.

- Describe the impact of these somatic growth changes on growth and development of the jaws and dentition.
- Differentiate children with normal and abnormal somatic growth
- Identify normal and abnormal patterns of jaw growth
- Explain the theories of craniofacial growth and outline and explanation for the aetiology of facial growth problems
- Explain the role of endocrine function in the development of normal and abnormal jaw growth
- Describe the dentofacial changes associated with adolescence
- List the timings of tooth eruption and identify the dental age of a patient
- List the six significant stages of tooth development.
- Describe clinical problems associated with disruption to the lifecycle of the tooth
- Describe the four major theories of tooth eruption and provide and explanation for clinical problems associated with tooth eruption
- Describe the normal dental arch dimensional changes between the deciduous to the permanent dentition
- Discuss in general terms, the importance of growth and development of the dentofacial region in the therapeutic procedures used to address developmental problems.
- Describe the maturational changes which occur in the growing dentition from childhood through to late adulthood

**PLEASE ENSURE THAT YOU HAVE REVIEWED THE ABOVE MATERIAL AS YOU WILL NEED A WORKING KNOWLEDGE TO SUCCEED IN YOUR LABORATORY AND CLINICAL SESSIONS**

The seven goals above correspond to the four instructional units of the course but in no means aims to prepare you for comprehensive management of orthodontic problems. On occasion, young children will present to the clinic with problems which lie outside the scope of this course. For interest, students will be encouraged to research issues associated with these problems but this will not be included in the examination process.

Like Growth and Development (Level I), this course is largely self-instructional. In addition to types of self-instructional material you have seen previously, this course has laboratory exercises in which diagnostic techniques are employed and laboratory and clinical simulation techniques are performed. You will have personal contact with faculty in seminars to discuss material you have learned from computer teaching programs and reading assignments. An amount of lecture time equivalent to what you would have spent in lectures to cover the self-instructional materials once has been set aside, but of course you can view the self-instructional materials at any time during their unit.

The course is in four didactic units in two levels. The four units in Level II and Level III, in which the self-instructional material is concentrated, span over Semester 1. Superimposed in this time are the laboratory sessions and two formative on-line tests within the UNC Orthodontic Instruction system. The material from Level II Units A and B will constitute the Semester 1.

The Level II Units may be reviewed at any time but will be formally reviewed in Semester 1. The material from Level II will be assessed in the Semester 1 Examination.

- is your job to:
- read the instructions
- view the videos and/or computer teaching programs (all with self-tests), and read the assigned texts
- use feedback from the video/computer self-tests and further review to be sure you have learned the material
- complete the laboratory exercises and online formative quizzes according to the deadlines outlined in the schedule
- attend the seminar at the end of each unit.

### Learning Strategies

Study materials for this course consist of

1) Computer teaching programs

LOCATION OF MATERIALS: Access to modules and self-tests is the same as you used for Level I, so you may not need to do the following.

- OrthodonticInstruction.com
  - and click on “Register for access”.
  - Fill out the registration form, using uncortho as the registration code.
  - Once you submit your registration, an automated email will be sent to the email address you entered into the form: NOTE: Your account will not be active until you click on the verification link in this email.
  - After your account has been verified, you can then log into the site using your username and password.
2. Reading materials from your orthodontic text, Contemporary Orthodontics (5th edition or 6th edition)
  3. Computers are available in the computer labs at OHCWA or in the University Libraries, and through use of your personal laptop computer at any of the various connections in the Dental School. Level II material has self-tests for you to use to determine how well you understand a given topic.

There will be some seminars in which you will need to take notes, just as in other courses. Deliberately, the same ideas are presented in more than one format. You need to go through all the assigned material, because the coverage and content are different in each. Then you can review and study it in the format you prefer.

It is important to review the learning objectives for each Unit prior to the review session and formulate your responses individually to gain maximum value from the experience. Although faculty or Post Graduate Students will present a summary of these focus points, it is not the intention to provide students with “another” lecture to learn verbatim. This is an opportunity to discuss learning objectives.

The course has been revised each year, almost exclusively based on student feedback. We have added material as an outcome of student suggestions and deleted/revised material as an outcome of student concerns. Please continue to let me know of any comments or concerns that you think would improve the course.

## Assessment

The indicative assessment structure provides an overview of how this unit is typically assessed. In order to fit teaching requirements, this may change slightly from year to year. Restrictions to face-to-face learning associated with COVID-19 may result in variation to the Indicative Assessment structure.

On-line Cephalometric Quiz Formative

On-Line Space Analysis Quiz Formative

Professionalism Pass/Fail

Practical Exercises\* Pass/Fail Formative

Final Examination (2 hrs-MCQ & short answers) 100%

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DENT5310 Orthodontic Module Component See Unit Guide

\*The Orthodontic Practical Exercises will comprise a number of tasks completed at different times in the unit:

1. Diagnostic exercises P/F
  - a. Facial Form analysis
  - b. Space analysis (model)
  - c. Cephalometric tracing
2. Knowledge based quiz 1(formative) P/F

P/F indicates the Practical or Laboratory exercise must be completed to a didactically, clinically or diagnostically acceptable level (indicating competence) before the end of Semester 1. Failure to submit the assessment by the end of Semester 1, not including the Study Break or Examination

time, will result in the student not being permitted to take the DENT5310 Orthodontics summative assessment item (Final Examination).

DENT5310 assessment - The Orthodontic Practical laboratory items are Pass/Fail and completion of the assignments is compulsory to sit the DENT5310 Final Examination. Attendance is compulsory for all sessions, and all missed sessions have to be made up and documented. Otherwise, the student is not permitted to sit the Final examination in DENT5310 Orthodontics Module.

The Orthodontic Final Examination will be a 2-hour MCQ and/or MCQ with short answer and short answer examination.

Professionalism – In the assessment process professionalism will be based on the Professionalism Policy for Dental Students and will be assessed as Pass/Fail component.

#### Supplementary Examinations and Assessment

If a student does not pass this Module, then a Supplementary Examination may be granted but this will depend on the student's overall academic performance to date in the DMD course.

Decisions regarding Supplementary Exams and additional assessments are made by the Board of Examiners at its meeting. A Supplementary Examination can take any form and will not necessarily be a written examination paper. The Course Coordinator and/or the Board of Examiners may recommend an alternative form of assessment if the student's work has been deficient in one particular part of the course – in this case a student may be required to undertake extra work and assessments in that part of the course only (e.g. if the diagnosis tests were failed, then an OSCE style exam or a written assignment may be granted; if insufficient practical work was done then extra practical work may be required, etc).

#### Preparing for Exams:

This course has multiple resources for you to utilize in your training: Textbook, online modules, module self-tests, lab manual, seminar

presentations, and prior coursework in orthodontics. Students in the past have expressed concern about expectations not being aligned regarding exams and how best to prepare. Considering this, here is a synopsis of the resources that should best prepare you to excel in this course:

**Textbook** – Mastery of assigned readings (textbook) correlates to the highest level of preparedness for exams. Reading assigned pages should be considered an absolute necessity for excellent performance in the course.

**Online modules** – The modules approximate the textbook’s information with supplemental cases and pictures. Online modules cover important concepts found in the book but do not include everything. If you study only the modules, you will not be fully prepared for the exams.

**Module self-tests** – These are a good representation of the difficulty level of questions represented in the course exams.

**Lab material and outlines** – this part of the guidebook is important to review for exams.

**Seminar Presentations** – presentations delivered by the Post-Graduate Orthodontic Students will help guide you in your studies and are particularly helpful to clarify any questions you may have.

**Prior Growth and Development Coursework** – Information from prior course reading/modules may be on future Growth and Development exams. Any questions from prior coursework material will be very general concepts

## II. THE SCHEDULE

See published timetable provided by School of Dentistry Operations Staff

### LEVEL II - UNIT A. THE NATURE OF ORTHODONTIC PROBLEMS

Directions are: Complete review and comprehension of ALL instructional materials.

Part 1. Malocclusion: What is it and why should we treat it?

(a) Read Contemporary Orthodontics Chapter 1

(b) Malocclusion: Definition and Prevalence. Then take the self-test.

Part 2. The etiology of malocclusion

(a) Read Contemporary Orthodontics Chapter 5

(b) Known Causes of Malocclusion, and do the computer self-test.

(c) Equilibrium Theory and the Etiology of Malocclusion, and the computer self-test.

(d) Review the educational objectives below. They are an outline of what you are expected to know when you have completed the Unit. If you aren't sure, you can meet the objective, look back at the appropriate instructional material.

Part 1. Malocclusion: What is it and why should we treat it?

- Describe ideal occlusion in terms of the relationship of the teeth to the line of occlusion.
- Describe ideal occlusion in terms of the occlusal relationship of the teeth in all three planes of space (transverse, antero-posterior and vertical).
- List the dental characteristics on which the Angle classification is based.
- Discuss the advantages of the Angle system for classification.
- Describe the functional, health and psychosocial reasons for orthodontic treatment, and place them in perspective in terms of their relative importance.
- Describe realistic goals for orthodontic treatment and indicate the way they have changed as modern dentistry developed.
- Discuss how need for orthodontic treatment compares with demand in the US at present and how demand is likely to change in the near future.

Part 2. The etiology of malocclusion

- Describe known causes of malocclusion in terms of major categories and put the known causes in perspective relative to the total number of patients with malocclusion.
- Indicate the two types of malocclusions most likely to be due to inherited jaw proportions and describe the evidence to support your categorization.
- Indicate the mechanism by which trauma to the mandible can affect its future growth.
- Identify the magnitude of force needed to cause movement of a tooth and relate this to the observed threshold for tooth movement.
- Identify the duration of force needed to cause movement of a tooth and relate this to the impact of habits like thumb sucking on the dentition.
- Describe the maturation of oral function from infancy to adult life, with particular emphasis on the pattern of swallow.
- Discuss myofunctional therapy for tongue thrusting as a potential therapy for anterior open bite in children, with emphasis on its underlying assumptions and their validity.
- Describe the possible role of nasal obstruction in the etiology of malocclusion and indicate the probable mechanism by which it would have an effect.

## LEVEL II - UNIT B. DIAGNOSTIC PROCEDURES

### Dentofacial Proportions

(a) Read Contemporary Orthodontics Chapter 6

(b) Facial Form Analysis. This computer teaching program incorporates the equivalent of the other computer self-tests, so there isn't a separate test. The exercise on this material is described below in the Space Analysis exercise.

### Principles of Cephalometric Analysis

(a) Read Contemporary Orthodontics Chapter 6

(b) Cephalometric tracing techniques. For this program, the online cephalometric quiz serves as the self-test.

(c) Cephalometric superimposition. For this program also, the online quiz serves as the self-test.

(d) Complete Online “Facial Form and Cephalometrics Quiz-Formative”

### Space Analysis

(a) Read Contemporary Orthodontics, Chapter 6

(b) Space Analysis and Its Interpretation and take the computer self-test.

(c) Complete Online “Space Analysis Quiz-Formative”

### Systematic Description of Malocclusion

(a) Read Contemporary Orthodontics, Chapter 6

(b) Ackerman-Proffit Classification: The Systematic Description of Malocclusion and take the computer self-test.

### Dentofacial Proportions

- Describe ideal dentofacial proportions from the full-face aspect, indicating the role of symmetry and the relationship of the width of upper to lower face characteristics.
- Describe ideal dentofacial proportions from the lateral aspect, indicating the A-P and vertical relationships of the upper, mid and lower face.
- Describe the method and objectives of facial form analysis.
- Discuss the limitations of facial form analysis.
- Carry out a facial form analysis

### Principles of Cephalometric Analysis

- Discuss the background for the development of cephalometric radiography in orthodontics.
- Identify the two major uses of cephalometric radiographs in orthodontics.

- Given a cephalometric radiograph, identify and trace landmarks necessary to properly outline and evaluate the position of (a) cranial base, (b) skeletal maxilla, (c) maxillary dentition, (d) skeletal mandible and (e) mandibular dentition.
- Given a cephalometric tracing, evaluate whether the incisor teeth are retrusive, positioned properly or protrusive relative to their supporting bone.
- Given a cephalometric tracing, evaluate the antero-posterior and vertical relationships of the jaws to the cranial base and to each other.
- Compare and contrast the measurement analysis and template analysis methods of evaluating cephalometric radiographs.
- Given initial and progress or final cephalometric tracing, complete an overall superimposition and maxillary and mandibular superimpositions, producing composite tracing.
- Given a composite cephalometric tracing, describe the changes evident in the tracing and relate them to growth or treatment.

### Space Analysis

- Identify the four major assumptions about growth and development on which space analysis is based.
- Discuss the rationale for expecting decreased accuracy of space analysis in children who do not have a Class I jaw relationship.
- Identify the diagnostic materials needed to perform a space analysis.
- Carry out a space analysis, as described in the space analysis practical exercise.
- Indicate how you would interpret a space analysis result in a child whose facial form or cephalometric analysis indicated that the incisors were retrusive or protrusive.

### Systematic Description of Malocclusion

- Identify the five major characteristics of malocclusion on which systematic description is based.
- Discuss the rationale for considering incisor crowding and incisor protrusion as being two aspects of the same thing.
- Describe how a skeletal posterior crossbite can be differentiated from a dental crossbite.

- Describe how a skeletal Class II or Class III malocclusion can be differentiated from a dental Class II or Class III.
- Describe the cephalometric characteristics of a skeletal open bite and a skeletal deep bite.
- Indicate how you would distinguish a dental anterior open bite from a skeletal open bite.

#### IV. PRACTICAL EXERCISES - Refer to DENT5310 Orthodontics Workbook

A. Facial Profile Analysis

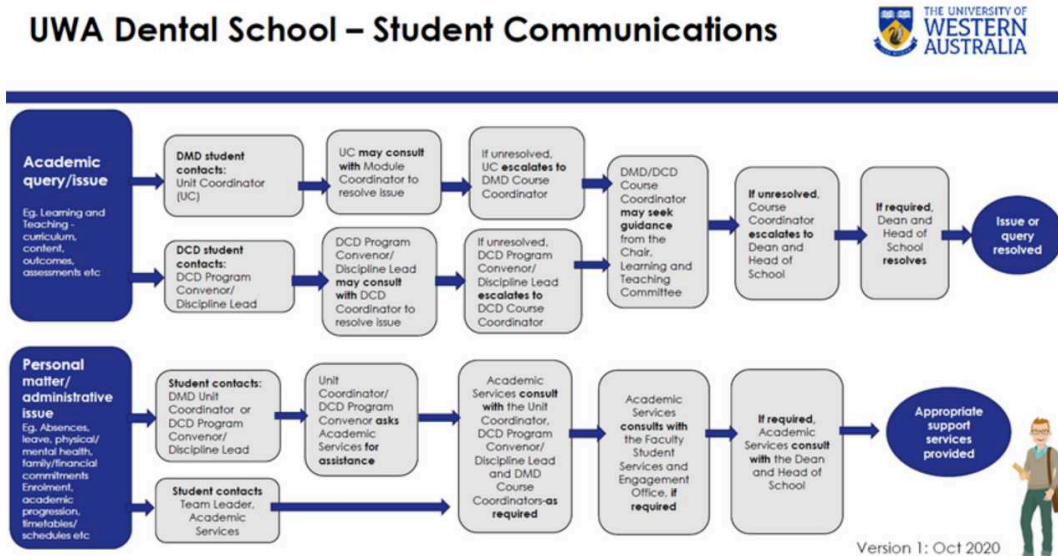
B. Cephalometrics and Cephalometric Analysis

C. Model and Dental Arch Analysis

D. Space Analysis

E. Diagnostic Model Preparation or Model Trimming – online only

#### V. ADMINISTRATION



If there are any student Academic queries or issues or there are personal matters or an administrative issues follow the above approved Student

Communication Flow Chart.

## Ethical Scholarship, Academic Literacy and Academic Misconduct

Ethical scholarship is the pursuit of scholarly enquiry marked by honesty and integrity.

Academic Literacy is the capacity to undertake study and research, and to communicate findings and knowledge, in a manner appropriate to the particular disciplinary conventions and scholarly standards expected at university level.

Academic misconduct is any activity or practice engaged in by a student that breaches explicit guidelines relating to the production of work for assessment, in a manner that compromises or defeats the purpose of that assessment. Students must not engage in academic misconduct. Any such activity undermines an ethos of ethical scholarship. Academic misconduct includes, but is not limited to cheating, or attempting to cheat, through:

- Collusion
- Inappropriate collaboration
- Plagiarism
- Misrepresenting or fabricating data or results or other assessable work
- Inappropriate electronic data sourcing/collection
- Breaching rules specified for the conduct of examinations in a way that may compromise or defeat the purposes of assessment.

Penalties for academic misconduct vary according to seriousness of the case, and may include the requirement to do further work or repeat work; deduction of marks; the award of zero marks for the assessment; failure of one or more units; suspension from a course of study; exclusion from the University, non-conferral of a degree, diploma or other award to which the student would otherwise have been entitled.

Refer to the [Ethical Scholarship, Academic Literacy and Academic Misconduct](#) and individual Faculty policies.

Appeals against academic assessment.

If students feel they have been unfairly assessed, they have the right to appeal their mark by submitting an Appeal Against Academic Assessment form to the Head of School and Faculty Office. The form must be submitted within twelve working days of the formal dispatch of your unit assessment. It is recommended that students contact the Guild Education Officers to aid them in the appeals process. They can be contacted on +61 8 6488 2295 or [education@guild.uwa.edu.au](mailto:education@guild.uwa.edu.au). Full regulations governing appeals procedures are available in the University Handbook, available online at [Appeals Against Academic Assessment](#).

### Attendance and Leave

- Attendance - Attendance at ALL lectures, seminars, laboratory and rostered clinical sessions is COMPULSORY for all students, as specified in the Faculty Rules. Failure to attend lectures, seminars, laboratory sessions or clinics may result in the need for remedial work, written or other assignments being prescribed, exclusion from the clinic, exclusion from the written examinations or a combination of these.
- Sick Leave - Any student who is unable to attend a lecture, laboratory or clinical session due to illness MUST telephone the Dental School Office and speak to Student Services personnel BEFORE their first lecture or other session of the day starts.

If none of the above staff are available to take your call, then you MUST leave a message on the voicemail system. You should also telephone AGAIN later in the morning to make sure that the message was received. If you have patients booked in for that morning session and you are unable to speak to the above staff, then you should also telephone the clinic and advise the staff there so your patients are not kept waiting unnecessarily.

A valid Doctor's Certificate, not signed by a family member, must be presented to the Dental School Office within 24 hours of your return to the School.

- Compassionate Leave - Students should follow the same process of telephoning the School office, as outlined above for Sick Leave, in

order to notify staff of their absence and the reason why the Compassionate Leave is required. Where possible (e.g. to attend a funeral), advanced notice should be

- given so patients can be cancelled prior to the day of Leave in order to reduce the inconvenience to your patients.
- Other Leave - The procedure for students in the School of Dentistry to apply for Leave for reasons other than illness or compassionate reasons is as follows:
  - copy of the Dental School student Leave Form is supplied as an Appendix in the Course Guidebook for Years 1-4 of the DMD course. All students will be supplied a copy of this Course Guidebook.
  - The student should firstly seek “in principle” approval for the Leave from the Head of School. An explanation of the reasons for the Leave will be required and, where applicable, supporting documents should be supplied. Students should note that this is not a guarantee of final approval for the Leave; instead, it is only to ensure that there is a valid reason for the Leave.
  - approved “in principle” by the Head of School, then the student must meet with each Unit Coordinator for any Units where lectures, laboratory clinical, other teaching or assessment sessions will be missed or otherwise affected. The student should discuss the possible arrangements for “catching up” all missed work/assessments with each Unit Coordinator. The Unit Coordinator will then sign the Leave Form and outline the work to be done or otherwise make comments if they are unable to make alternate arrangements for the missed work.
  - Students should note that it is not always possible to arrange “catch up” sessions or examinations due to logistical reasons. Students should also understand that any such extra work may be inconvenient, may not be feasible, or may otherwise affect the staff members’ work requirements. Students should be considerate of the possible effects that their Leave may have on patients, staff and other students.
  - Final approval is then to be obtained from the Head of School once all affected Unit Coordinators have provided their signed comments. If any Unit Coordinator is unable to make alternate arrangements for the student to “catch up” on all work, then the Leave may not be granted.

Such situations will be considered by the Head of School in consultation with staff and students involved or affected.

- Approved leave forms will then be forwarded to the Faculty office. Any applications for Leave for more than one week must also be approved by the Dean.
- a student is not happy with the outcome of their application for Leave, then they should contact the Head of School in the first instance.

## Board of Examiners

Should a student perform poorly in an examination or other assessment, to enable them to achieve a pass they may be required to undertake additional assessments (ie viva, remediation, practical work etc). Further assessments can be scheduled anytime prior to the Board of Examiners meeting.

All Students MUST ensure that they can be contacted by the Dental School and that they are available to attend any further examination at short notice during the University's examination period which extends to the day the Board of Examiners in Dentistry meets.

Therefore, it is the students responsibility to make sure that they are readily available should they be required to sit any further assessments during this time.

## Academic dishonesty

All forms of cheating, plagiarism and copying are condemned by the University as unacceptable behaviour. The Faculty's policy is to ensure that no student profits from such behaviour. Generally, a failure will be recorded for the subject in which the cheating has occurred. Serious cases shall be referred to the University's Board of Discipline. All students should note that cases of copying are automatically reported to the Sub-Dean and documentary evidence along with associated correspondence is placed on the student's permanent record.

## UWA Student Guild

Students can contact the Guild as follows –

The University of Western Australia Student Guild

Phone: (+61 8) 9380 2295

Facsimile: (+61 7) 9380 1041

E-mail: [enquiries@guild.uwa.edu.au](mailto:enquiries@guild.uwa.edu.au)

Website: <http://www.guild.uwa.edu.au>

Charter of Student Rights

The following URL details your rights as a student of this University:

[http://www.guild.uwa.edu.au/info/student\\_help/student\\_rights/charter.shtml](http://www.guild.uwa.edu.au/info/student_help/student_rights/charter.shtml)

If students feel they have been unfairly assessed, they have the right to appeal their mark by submitting an Appeal Against Academic Assessment form to the Head of School and Faculty Office. The form must be submitted within 12 working days of the formal dispatch of your unit assessment. It is recommended that students contact the Guild Education Officers to aid them in the appeals process.