

SYLLABUS

COURSE: CLIN 3011 Clinical Orthodontics
SEMESTER: Fall/Spring/Summer
CREDIT HOUR: 0.5

REVISED: 2007
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GOAL

The clinical course introduces the dental student to the practice of clinical orthodontics. The primary goal of this experience is to reinforce didactic concepts taught in the second year and build upon them in a manner that will better prepare the student to recognize, communicate and manage orthodontic problems in the general dentistry setting.

OUTLINE

INTRODUCTION

Like general dentistry, orthodontic treatment is carried out in a series of logical steps. The first step, diagnosis, involves the collection of a database of clinical information about the patient and its distillation into a clearly stated prioritized problem list. The student must be able to diagnose malocclusion using various diagnostic aids. Treatment planning, the next step, is the synthesis of possible solutions to specific problems into a treatment strategy that is best for the patient. The student must be able to recognize normal growth and development of the craniofacial complex and occlusion and take appropriate action if any interferences are found. Finally, the treatment plan is presented to the patient in such a way that informed consent is obtained. Although this approach is not unique to orthodontics, its repetition reinforces the process by which the dentist works up a case in the practice of general dentistry.

CLINIC EXPERIENCE

The clinical experience in orthodontics is planned to familiarize the dental student with the clinical practice of orthodontics. The reasons for taking comprehensive orthodontic records in addition to the clinical examination and facial form analysis will be reinforced. Monthly exposure in the graduate orthodontic clinic over two years will familiarize the student with the orthodontic armamentarium used in the clinical practice of orthodontics. Interdisciplinary skills are expected to improve as the dental student develops familiarity with the terminology and classification systems used by clinical orthodontists. The student is expected to develop additional confidence in the recognition of simple and complex malocclusions and know the appropriate action required for each patient. As the student's diagnostic skills improve, the student will be expected to recognize which cases are appropriate in the general dentistry setting and which cases should be referred to the orthodontic specialist.

Each dental student will assist and observe one orthodontic resident for two hours each month of the third and fourth years of dental school. This will allow the dental student to follow the initiation, progression and completion of treatment on several patients with different orthodontic problems.

In addition to the clinic component of this course, each dental student will complete a comprehensive orthodontic work-up once a semester based on orthodontic records in the Department of Orthodontics. The dental student will use The University of Texas Dental Branch at Houston Orthodontic Work-up Form (included in the Resource section) and the UTDB Cephalometric Technique Tracing Manual (included in the Resource section) to guide them through the process of developing a problem list, treatment plan, treatment objectives and treatment mechanics for this "paper patient." Four cases will be evaluated over the course of two years. The student will work up a Class I nonextraction malocclusion during the Fall semester and a Class I extraction malocclusion during the Spring semester.

Also, each dental student will attend an orthodontic case presentations and group discussion led by Dr. Salas-Lopez and the orthodontic residents. The student will attend these sessions four times each semester during the fall and spring.

- I. Third Year Orthodontic Clinical Experience
 - A. Assisting orthodontic resident
 - B. Comprehensive orthodontic records
 - C. Orthodontic armamentarium/terminology
 - D. Simple vs. complex orthodontic problems
 - E. Semester orthodontic case work-up

CRITERIA TO ACHIEVE COMPETENCIES

PRIMARY COMPETENCIES

IV. 6. Recognize the normal range of clinical and radiographic findings and deviations that require monitoring or management.

1. The student will complete one orthodontic case work-up a semester (four cases over course of the Third and Fourth years) from comprehensive orthodontic records of from the patient pool records of the Department of Orthodontics. The student must assess the skeletal position of the maxilla and the mandible in the anteroposterior and vertical dimensions with respect to the anterior cranial base and with respect to each other using cephalometric films and the UTDB cephalometric analysis. The student will determine if the craniofacial complex is exhibiting normal growth in the anteroposterior and vertical dimensions within the limits of normal variability by comparing the derived cephalometric values with normal cephalometric values. This information must then be compared with the findings of the clinical exam, the model analysis, the facial form analysis and any discrepancies resolved.
2. Using the same records, the student must assess facial symmetry or asymmetry utilizing the facial form analysis. The facial form analysis will be based on lateral and frontal plane patient photographs and any written notations in the clinical evaluation. Using normal facial anthropometric values, the student must determine if the craniofacial complex is exhibiting normal growth and development within the limits of normal variability in the three spatial dimensions. This information must then be compared with the findings of the clinical exam, the model analysis, the facial form analysis and any discrepancies resolved.
3. Using the same records, the student must assess the development of occlusion of the patient using diagnostic models and panoramic films. Comparing the patient's state of the occlusion with normals, the student must determine if the patient's occlusion is developing within the limits of normal variability. This information must then be compared with the findings of the clinical exam, the model analysis, the facial form analysis and any discrepancies resolved.
4. Also, the student will attend an orthodontic case presentation and group discussion. The student will recognize which type of malocclusion, diagnosis and treatment plan is needed for each case shown.

Evaluation Criteria: Please refer to the Evaluation Methods section of this syllabus. Each of the four case work-ups will be evaluated and graded by the undergraduate Course Director using the criteria listed in the Case Work-up Form.

- I. Cephalometric Tracing
- II. Cephalometric Analysis
- III. Study Cast Analysis
- IV. Problem List
- V. Treatment Plan

VI.12 Manage patients requiring orthodontic treatment or space maintenance.

1. The student will observe and assist the same orthodontic resident for two hours each month during the student's Third and Fourth years of dental school.
2. The student will make every effort to schedule his/her time in the orthodontic clinic so that the same patients can be seen over the course of the two-year treatment. The student will gain an appreciation of just how long orthodontic treatment takes as he/she sees initiation, progression and completion of orthodontic treatment.
3. If the student cannot schedule clinic with the same patients over the course of the two-year treatment, the student will schedule orthodontic clinic time to maximize malocclusion types and treatment modalities seen.

RESOURCES

I. Media Resources

UTDB Cephalometric Tracing Manual - Undergraduate Edition
Salas/English (2004)

UTDB Orthodontic Work-up Form (2004)

Tracing Paper
Available from UTDB Bookstore

Orthodontic case
Available on BlackBoard

Orthodontic Template and Protractor
Available at UTDB Dispensary (third floor)

II. Human Resources

Instructor	Available	Phone
Dr. Walter Belanger	Thursday AM & PM	713-500-4116
Dr. Harry Bussa	Wednesday AM & PM	713-500-4116
Dr. Jeryl English <i>Department Chair</i>	Monday-Friday, AM & PM	713-500-4116
Dr. Kathleen McGrory <i>Clinical Director</i>	Monday-Friday, AM & PM	713-500-4110
Dr. Carl Gullick	Tuesday, AM & PM	713-500-4116
Dr. Anna Maria Salas-Lopez <i>Course Director</i>	Monday AM, Tuesday AM & PM, Thursday, AM & PM	713-500-4143

III. Student/Resident Pairings

Third year dental students are assigned first year orthodontic residents. A list of the group pairings can be found within your rotation schedule and is also provided on the CD ROM received at the start of the fall semester, "*Third Year Orthodontic Case Presentation Rounds.*" Orthodontic residents may be contacted in the ortho clinic on the second floor on Monday through Friday from 9:00 – 11:30 am and from 2:00 -4:00 pm.

ACTION PLAN

The monthly clinic experience in orthodontics starts the beginning of August and finishes the end of April. Third year dental students are assigned to a First year orthodontic resident (see Resources). You are required to assist your resident in the clinic for one, two-hour period each month (Third year students will schedule clinic time in the afternoon). If your resident finishes his/her patients early, you will assist them with lab work or whatever is required for the entire two-hour block. You will learn the most if you schedule your monthly rotation to follow one or two patients as they are treated over the course of a year.

Each dental student is required to complete a comprehensive orthodontic work-up on one patient each semester. Use the UTDB patient work-up form and UTDB cephalometric training manual to assist you. You will be assigned a case to work up in the fall and another case to work up in the spring. You will not personally evaluate these patients. The records of these patients will be provided for you on BlackBoard.

Each case work-up requires that you to develop a problem list, treatment plan, treatment objectives and treatment mechanics based on the cephalometric analysis you perform, the photographic analysis and study cast analysis. You may consult with your assigned resident, orthodontic faculty, or the Course Director as needed.

Each dental student is required to attend an orthodontic case presentation and group discussion. Two cases will be presented on each session. Treatment planning will be discussed. There will be two sessions of one-hour each one per semester (fall and spring).

EVALUATION METHODS

The final course grade will be calculated from the evaluations of the student's performance in the following areas:

COMPETENCY ASSESSMENT

25% **Diagnosis of Malocclusions (written examination)**

You will be tested on information from the syllabus, UTDB Cephalometric Tracing Manual (undergraduate edition), and old Board questions. You should be able to identify Class I, Class II, and Class III malocclusions given study models and/or lateral cephalometric x-rays. Please check your rotation schedule (Dr. Jessee) for the appropriate exam date. The written exam will represent 25% of the course grade.

DATES

Monday, October 19, 2009, 9:00 am Room 207

Monday, November 2, 2009, 9:00 am Room 132

CASE WORK-UP

25% **Students must complete one case work-up in the fall semester and one in the spring semester.**

Twenty-five percent of your semester grade is based on the assigned comprehensive case work-up (see Case Work-up Evaluation Form).

Cephalometric Tracing

Landmark accuracy
Measurement accuracy

Cephalometric Analysis

Dental relationships
Anteroposterior skeletal relationships
Vertical skeletal relationships
Transverse skeletal relationships

Problem List

List all significant problems

Treatment Objectives

Pursue comprehensive or limited objectives

Study Cast Analysis

Space analysis
Transverse relationship
Molar and cuspid relation
Crossbite
Overbite/overjet

Treatment Plan

Appropriate treatment
Appliance and mechanics
Treatment time estimate

Each criteria in the work-up for will be assigned a numerical point value. The case work-up form will represent 25% of the course grade.

If you do not complete and turn in case work-up by your published deadline, 10 points will be deducted.

Deadline for the fall semester: November 13.

Deadline for the spring semester: April 15.

CASE PRESENTATION

25% Students will participate in four, 30-minute sessions where cases will be presented.

Case presentation and group discussion will represent 25% of the course grade. The cases shown need to be diagnosed and treatment planned depending on the type of malocclusion. If you have conflict with another rotation, it is your responsibility to arrange a make-up session. These sessions will be for the third year students in the Fall semester and the Spring semester.

Fall and Spring Semester

Fall dates: Thursdays, **Sep 10, Oct 8, Nov 12, Dec 3, at 1-1:30 pm in Room 207.**

Spring dates will be determined at a later date. Please check the spring clinic rotation schedule when it is posted.

CLINICAL ROTATION

25% Each criteria in the clinical evaluation will be assigned a numerical point value from 1 (unacceptable) to 5 (excellent) or NA (not evaluated). The grade for the two-hour clinical experience will be the total number of points you make divided by the number of criteria evaluated. The clinical evaluation will represent 25% of the course grade.

(Caution: you are expected to schedule and attend your clinical rotation each month, no exceptions.)

- *if you have another rotation to attend, a written excuse from your faculty will be required*
- *if you miss a monthly rotation, it can be made up the following month with a 10 point deduction (out of the 25 points)*
- *if you miss a rotation and do not make it up the following month, a 0 will be given for that monthly rotation*

FINAL CLINICAL COURSE SEMESTER GRADE

Since 25% of your semester grade comes from clinic rotations, your grade will be averaged to the nearest one-hundredth of a point and multiplied by 0.25. Since 25% of your semester grade comes from the case work-up, your score will be averaged to the nearest hundredth of a point and multiplied by 0.25. The written examination will be averaged to the nearest hundredth of a point and multiplied by 0.25. Since 25% of your semester grade comes from the case presentation and group discussion, your score will be averaged to the nearest hundredth of a point and multiplied by 0.25. All four grades will be added to complete the final semester grade. A semester grade will be assigned as follows based on the final average:

90-100	=	A
80-89	=	B
70-79	=	C
< than 69	=	F

APPENDIX

**INSTRUCTIONS FOR UTHHSC DENTAL BRANCH
ORTHODONTIC WORK-UP FORM**

1. Obtain patient's record from BlackBoard. Each dental student will be assigned a specific case work-up for each semester. The case must be completed and turned into the orthodontic department (third floor) by assigned due date, 10 points will be deducted.
Deadline for the fall semester: November 13.
Deadline for the spring semester: April 15.
2. Review patient's record on BlackBoard (photos, radiographs, and study models).
3. Complete sections 1, 2, and 3 using the panoramic radiograph and study models.
4. Trace the cephalometric radiograph and record information on page two of the work-up form. Use the Dental Branch Cephalometric Tracing Technique Manual as a guide.
5. Complete sections 4 and 5 using the Dental Branch Cephalometric Tracing Manual as a guide.
6. The TREATMENT OBJECTIVE section should indicate what you plan to achieve with orthodontic treatment.
7. The TREATMENT PLAN section should state:
 - extraction or non-extraction and which teeth if extraction is indicated
 - early treatment or comprehensive
 - orthognathic surgery or non-surgery
 - periodontal treatment (before or after orthodontic treatment)
 - restorative treatment (before or after orthodontic treatment)
8. Turn completed diagnostic work-up to the Orthodontic office on third floor and place into Dr. Salas's mailbox or give it to the ortho secretaries. ***If you need help working up the case or have any questions, please feel free to contact any orthodontic resident, any orthodontic faculty member, or Dr. Anna Maria Salas-Lopez.***

**THE UNIVERSITY OF TEXAS DENTAL BRANCH AT HOUSTON
ORTHODONTIC WORK-UP FORM**

Student name _____

Month and Case Letter _____

Patient age _____ DOB _____ Sex _____ Race _____

1. INTRAORAL X-RAY (8 points)

A. Caries (#) _____ B. Missing (#) _____ C. Impacted (#) _____
 D. Supernumerary (#) _____ E. 3rd molar status _____ F. Root resorption (#) _____
 Root resorption potential (#) _____
 Pathology _____

2. STUDY CAST ANALYSIS (8 points)

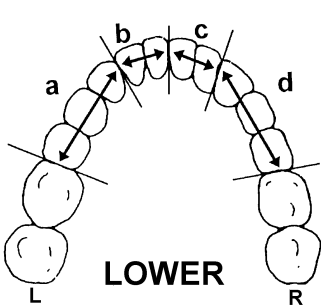
A. Occlusion of permanent first molars
 Right () Angle Class I () Left
 () End-to-end ()
 () Angle Class II ()
 () Angle Class III ()

B. X-bites, rotations, etc _____
 C. Overbite (mm) _____
 D. Overjet (mm) _____
 E. Arch Symmetry _____
 F. Curve of Spee Mild _____ Mod _____

Sev _____

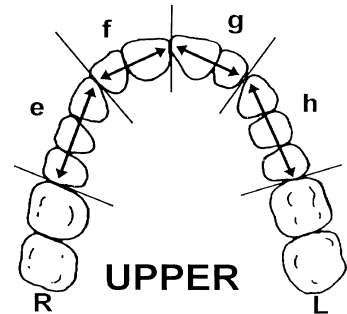
3. PERMANENT DENTITION SPACE ANALYSIS (8 points)

Space Available (SA)



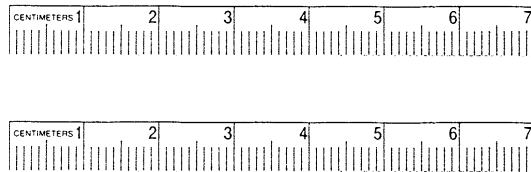
Mandibular Arch Segment Lengths
 a: _____ mm
 b: _____ mm
 c: _____ mm
 d: _____ mm
 Total: _____ mm

Maxillary Arch Segment Lengths
 e: _____ mm
 f: _____ mm
 g: _____ mm
 h: _____ mm
 Total: _____ mm



Space Required (SR) - Mandible

#20 - _____ mm
 #21 - _____ mm
 #22 - _____ mm
 #23 - _____ mm
 #24 - _____ mm
 #25 - _____ mm
 #26 - _____ mm
 #27 - _____ mm
 #28 - _____ mm
 #29 - _____ mm
 Total _____ mm



Space Required (SR) - Maxilla

#4 - _____ mm
 #5 - _____ mm
 #6 - _____ mm
 #7 - _____ mm
 #8 - _____ mm
 #9 - _____ mm
 #10 - _____ mm
 #11 - _____ mm
 #12 - _____ mm
 #13 - _____ mm
 Total _____ mm

Mandibular space discrepancy = Space available – Space required = _____ mm

Maxillary space discrepancy = Space available - Space required = _____ mm

4. CEPHALOMETRIC SUMMARY: (Descriptive conventions only, refer to cephalometric manual for terms) (8 points)

A. Skeletal

B. Dentoalveolar

C. Soft Tissue

5. **PROBLEM LIST:** (Descriptive conventions only, refer to cephalometric manual for terms, 8 points. For assistance, please contact resident faculty.)

A. Systemic (congenital/acquired):

B. Skeletal:

C. Dental:

D. Soft tissue:

TREATMENT OBJECTIVES: (4 points)

TREATMENT PLAN: (Include extractions, if needed, specify which teeth.) (4 points)

Estimated treatment time: _____ months