NEW YORK CITY COLLEGE OF TECHNOLOGY
THE CITY UNIVERSITY OF NEW YORK

DEPARTMENT OF
RESTORATIVE DENTISTRY

COURSE CODE: RESD 2415
COURSE TITLE: ORTHODONTICS

RESD 2415 Instructional Team
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Spring Semester

COURSE DESCRIPTION:	An introduction to basic techniques of orthodontic appliance construction including preparation of orthodontic study models, fundamentals of appliance design and interpretation of work authorizations. This course is designed to prepare the dental technology student with a background in the types of normal occlusion and malocclusion, the varieties and types of appliances used to move teeth, and the physiological actions that occur when teeth are moved through bone as a result of orthodontic treatment.
CLASS HOURS AND CREDITS:	3 Laboratory Hours; 1 Lecture Hour per Week; 2 Credit
NUMBER OF WEEKS:	15 Weeks
CURRICULUM LEVEL:	Fourth Semester
PREREQUISITES:	RESD 2310
TEXTBOOK:	A course for Dental Tech. Students in the Construction and Repair Orthodontics and Pedodontic Appliances. By: James E. McIver D. D. S., James L. Riley, D. D. S., Rodney J. Klima, D. D. S.
REFERENCE:	Orthodontic Technology, T.M. Graber W.B. Saunders, and Co., Philadelphia, Pa.

Last Updated 1/25

POLICIES:

ACADEMIC INTEGRITY

CUNY Policy on Academic Integrity

Academic dishonesty is prohibited in The City University of New York. Penalties for academic dishonesty include academic sanctions, such as failing or otherwise reduced grades, and/or disciplinary sanctions, including suspension, or expulsion.

Source: NYCCT College Catalog: http://www.citytech.cuny.edu/academics/academic-catalog.aspx

NYCCT Academic Integrity

Students and all others who work with information, ideas, texts, images, music, inventions, and other intellectual property owe their audience and sources accuracy and honesty in using, crediting, and citing sources. As a community of intellectual and professional workers, the College recognizes its responsibility for providing instruction in information literacy and academic integrity, offering models of good practice, and responding vigilantly and appropriately to infractions of academic integrity.

Source: NYCCT College Catalog: http://www.citytech.cuny.edu/academics/academic-catalog.aspx

Restorative Dentistry

1. All Restorative Dentistry students must submit completed assignments or projects (in lab or theory) by the assigned due date as stated in the course outline.
2. Plagiarism in lecture or laboratory assignments, exams or projects will not be accepted. Student will not receive a grade if papers or assignments were done by someone else. The department will adhere and follow the Academic Integrity Policy and Procedures as per NYCCT & CUNY Policies.
3. Students are responsible for knowing all material covered in reading assignments and handouts for both lecture and laboratory. Students are responsible for knowing information from reading assignments regardless of whether it has been covered during class sessions or not.
4. RESD students are responsible for being in class on time and for participation in laboratory demonstrations. Failure to observe laboratory demonstrations may affect student's performance and contribute to the failure of the course.

ATTENDANCE

NYCCT Attendance & Lateness

Attendance and class participation are essential and excessive absences may affect the final grade. Courses with laboratory, clinical or field work may have specific attendance policies.

Source: NYCCT College Catalog: http://www.citytech.cuny.edu/academics/academic-catalog.aspx

Restorative Dentistry Professionalism & Participation

The Department of Restorative Dentistry follows NYCCT, CUNY and Dental Laboratory Technology industry standards in order to educate, develop, advance and guide future dental technology professionals, preparing graduates for workplace readiness. In order to successfully complete Restorative Dentistry courses, students must consistently participate in classes and meet deadlines as stated in course syllabus.

To successfully complete Restorative Dentistry curriculum the students are required to observe course instructor's demonstrations and complete all fabrication tasks under course instructor's supervision. Classes will begin promptly at the scheduled time. Laboratory demonstrations are usually conducted at the beginning of the session and cannot be redone for the convenience of a student who arrives late or is absent. When a student is given instructor's permission to leave the class, the student will return to class in a reasonable time.

Students enrolled in RESD course must meet all course requirements as stated in course syllabus in order to pass it. RESD students must complete required assignments, tasks, projects and exams by specified due dates. Failure to submit or complete the assignment, tasks, projects or exam by specified due dates will result in a zero (0) grade and possible failure of the course. It is strongly advised that students are present for all classes during the semester including 15 laboratories and 15 lectures.

GRADING

Restorative Dentistry courses include didactic or didactic and laboratory sections which are graded accordingly. In didactic and laboratory sessions, the final grades will be computed based on grading included in course syllabus. Most courses are graded based on 60% of the laboratory and 40% of the lecture grades. Student must achieve a passing grade of at least 70% in the laboratory and at least 70% in the lecture sections of the course in order to receive the minimum passing grade of "C" for the entire course. Failure to meet the minimum of 70% average in either component of the course confirms that the student has not met the minimum requirements for successful completion of the course and a grade of "D" or "F" will be given based on student's performance in the failing section of the course. RESD student is required to repeat any RESD course for which he/she receives a grade below minimum of "C". For courses with

laboratory and lecture components, the student needs to repeat both, the lecture and the laboratory sections, even though the score in one of the sections may have been greater than 70%.
RESD students will participate in the end of semester clean-up of the Restorative Dentistry dental laboratories. The date of final cleanup will be announced in advance. For students who are absent during final clean up, 5% of final grade will be deducted.

College grading scale

A	=	93-100%
A-	=	90-92.9%
B+	=	87-89.9%
B	=	83-86.9%
B-	=	80-82.9%
C+	=	77-79.9%
C	=	70-76.9%
D	=	60-69.9%
F	=	59.9 and below

SATISFACTORY PROGRESS

Students are expected to maintain 2.0 G.P.A. or higher in all classes. Students whose cumulative G.P.A. fall below the minimum 2.0 G.P.A. will be placed on academic alert or academic probation by the College. Students on academic probation may be subject to attempted credit restrictions which can affect progress in taking all courses needed for a semester. Failure to raise cumulative G.P.A. to the appropriate level could result in dismissal from the College.
Any students receiving a grade of "D" or "F" in a RESD courses will be required to repeat that course. RESD course may only be repeated once. Failure to satisfactorily complete a repeated RESD course will be considered failure to maintain satisfactory progress in the major and will result in dismissal from the major.

PROFESSIONALISM & ETHICS

1. Since practice of dentistry carries with it a high degree of responsibility, a mature, professional, and ethical conduct is expected of all students at all times (lecture & laboratory sessions, hybrid & online sessions, externship sites, professional events/seminars, etc.). Unprofessional behavior that shows inattentiveness and disrespect for others will be taken into consideration during the grading process. Points may be deducted at the discretion of any faculty member regardless of what course is in session. This includes incidents in the hallways, by lockers, or anywhere on NYCCT campus. Students will conduct themselves in a professional manner. No horseplay, offensive language, shouting or any other misconduct will be allowed.
2. Netiquette: Online Etiquette-Students will conduct their online posts and replies with respect for others, which include courtesy, dignity, and appropriate language at all times. Inappropriate behavior of any kind in online settings will not be tolerated and will negatively affect student's grade.
3. All faculty members will be addressed by their proper title.
4. Students are required to use proper dental terminology when discussing dental prosthesis.
5. Students are to have all required instruments and supplies when attending laboratory sessions.
6. Students are not permitted to do other students' work although assistance and teamwork are strongly encouraged.
7. All electronic devices must be turned off during all RESD classes unless otherwise specified by the instructor.
8. Each RESD student will be assigned a locker in the beginning of each semester and will vacate the locker by the last day of the semester. If the locker is not returned back in clean condition by the end of the semester, the locker will be broken by CLT. The student will not receive another locker the next semester.
9. Students should make arrangements to attend all department events and professional development seminars in which an invitation is extended. Students are strongly encouraged to attend events, professional development seminars and meetings sponsored by the department to elevate their knowledge, skills and understanding of the field of study.
10. Department offices and stock rooms contain sensitive and personal information, classroom materials, supplies and equipment, and should be used for official use only. Students and unofficial personnel should not be allowed in the department offices unless to fulfill official business.

DRESS, SUPPLIES & TEXTBOOKS

1. Laboratory smocks (lab coats) with Restorative Dentistry Department emblem must be worn at all times in the laboratory. Emblems are to be attached to the left breast pocket. Smocks must be clean and kept completely buttoned or tied when worn. Failure to wear smocks will necessitate students being barred from laboratory and marked absent.
2. Closed-toe shoes are required while working in the laboratory.
3. No hats/caps of any type are to be worn in the laboratories. *(Except for religious reasons)*
4. Students must purchase and have in their possession the required tools, supplies, PPE and textbooks by the 2nd week of scheduled classes. A list of all course materials will be available in the department's main office or in CLT's office. All personal tools should be clearly labeled with student's name.
5. Students should acquire required textbooks for each course and are expected to read assigned pages and review procedures ***prior*** to attending lecture and laboratory classes. The list of required textbooks will be listed in all course syllabi.
6. RESD students are responsible for their belongings at all times. Restorative Dentistry Department does not take responsibility for left over items.

HEALTH & SAFETY

1. No eating, drinking or smoking is permitted in laboratories or classrooms.
2. No electronic devices (i.e. phones, headphones, computers or tablets) will be permitted in the laboratories or classrooms unless requested for classroom use by the instructor.
3. No outerwear, shopping bags, attaché cases, luggage etc., are permitted in laboratories.
4. Bunsen burners when lit are a potential danger. Bunsen burners must be turned off when you leave your bench. Long hair and hair spray are flammable items. Pay particular attention to any Bunsen burner flame. Do not lean over the open flame.
5. Chucks must be securely placed onto bench engine shaft to avoid chuck flying off when engine is turned on.
6. Boiling water can result in serious burns. Extra caution should be taken when boiling out or using boiling water.
7. Burnout furnaces and porcelain furnaces are potentially dangerous. Tongs should be used when picking up hot casting rings or ceramic work.
8. Students with long hair must wear a hairnet or tie back their long hair to prevent accidental burning from Bunsen burners or other serious accidents. Hair can easily get caught in hand piece or lathe.
9. Safety eye glasses must be worn by all occupants of the laboratory while any procedures are being conducted that produce dust or airborne particles. Safety eye glasses with side shields may be obtained from a hardware store. They are essential to the students' safety.
10. Eye protection measures should be taken when working with curing lights, lasers, and heating or melting metal.
11. Proper mask (N95) should be worn when grinding metals, ceramics, and acrylics or when using materials creating dust.
12. Students not enrolled in a RESD course, from this and other departments, will not be permitted to visit during laboratory sessions.
13. Students will not use any equipment until demonstrated by the instructor.

HELPFUL INFORMATION ON HOW TO ACCESS AND NAVIGATE BRIGHTSPACE:

Visit the Student Welcome Center in the Library Building on the first floor to seek assistance with Brightspace setup, password, and access issues.

Visit the student computer lab in the General Building, sixth floor, room G600 and v-217. The phone number for the lab is (718) 254-8565.

Refer to "Student Brightspace" on the NYCCT website. To enter this site:

Access link: Student Brightspace - Academic Technologies and Online Learning (AtoL)

Brightspace tutorial - Brightspace: Student Tutorial

Click on "Quick Links"

Go to "Helpful Links" and click on " Academic Technologies and online Learning (AtoL)."

Click on "Instructional Technology Tutorials and Handouts"

Scroll down and click "Brightspace basics for students."

College provides numerous student Brightspace training sessions throughout the semester.

Use the description of the navigation of the Brightspace site

CLEANLINESS

1. Students must have a plastic place mat to protect bench top during laboratory sessions.
2. Students are required to clean-up working areas and equipment at the conclusion of any procedure. Timely clean-up is important to prepare the area for the next student and ensure equipment remains in working order. Especially important is that stone or investment is not allowed to harden in the sinks, in the mixing bowls or in contact with the equipment.
3. Each student is required to leave work station spotless by removing all debris, papers, wax, plaster, etc. from drawers, work station tops and floors in the immediate vicinity of the seat before leaving. In addition, each student will be assigned responsibility for maintaining the cleanliness of an area used in common by all members of the class. Also, equipment such as duplicating flasks, articulators or any other equipment issued by the instructor must be returned clean and in good working condition (5% of final grade).
4. RESD students will participate in the end of semester clean-up of the laboratories that will be scheduled in the morning after the last working laboratory class. 5% of final grade will be deducted for students who will not show up for the final clean up.

GOALS AND OBJECTIVES OF RESD-2415 - ORTHODONTICS:

Upon successful completion of this course, the student should be able to:

1. List the steps required to fabricate an upper Hawley retainer.
2. Demonstrate how to fabricate an upper Hawley retainer using the proper tools and materials.
3. List the steps required to fabricate a fixed lower lingual holding arch.
4. Demonstrate how to fabricate a fixed lower lingual holding arch using the proper tools and materials.
5. List the steps required to fabricate a fixed band and loop space maintainer.
6. Demonstrate how fabricate a fixed band and loop space maintainer using the proper tools and materials.
7. Identify and describe different types of occlusion and malocclusion.
8. Identify the purposes of different types of fixed and removable orthodontic appliances.
9. Demonstrate how to place a helix spring and expansion screw in an acrylic retainer.
10. Understand the difference between passive and active appliances.

General Education Goals:

1. Quantitative reasoning – Students will utilize measuring instruments to obtain proper angles of an orthodontic study model; Models must conform to the specified angles provided in course handouts and laboratory instructions.

2. Writing – Student's will complete a written report. There will be a lecture writing assignment in which an evaluation of an article related to Orthodontic treatment will be accomplished utilizing critical reading strategies.
3. Reading – Students will be required to read literature on the theory and practice of fabricating orthodontic.
4. Oral communication – Students will be required to develop a professional vocabulary utilizing appropriate dental terms in communicating with fellow students and instructors.

Lecture Course

1	Intro To Orthodontics	Synchronous
2	Removable Appliances	Synchronous
3	Classes of Occlusion	Synchronous
4	Quiz	Synchronous
5	Design of Appliances	Synchronous
6	Procedure on wire bending	Asynchronous
7	Fixed Ortho appliances	Synchronous
8	Fixed Ortho appliances	Synchronous
9	Midterm	Synchronous
10	Wire Bending	Asynchronous
11	Wire Bending	Asynchronous
12	Application of Acrylic	Synchronous
13	Finishing Metal and Acrylic Work	Synchronous
14	Final Review	Synchronous
15	Final	Synchronous

Laboratory Course Outline
(Tentative Schedule, subject to change)

1	Orthodontic study models discussion of procedures and demonstrations
2	Hawley Retainer Design and forming of Labial bow
3	Hawley Retainer Completion of labial bow and claps
4	Hawley Retainer Positioning of wires and expansion screw
5	Hawley Retainer

	Application of acrylic
6	Hawley Retainer Repair
7	Hawley Retainer Finish and Polish
8	Fixed Lower lingual holding arch
9	Fixed Lower lingual holding arch (Project1. Orthodontic Study Models & Hawley Retainer due for completion)
10	Fixed Lower lingual holding arch
11	Fixed Lower lingual holding arch
12	Unilateral fixed band and wire space maintainer
13	Unilateral fixed band and wire space maintainer (Project 2 due for completion)
14	Unilateral fixed band and wire space maintainer
15	Unilateral fixed band and wire space maintainer. (Project 3 due for completion)

OUTCOMES ASSESSMENT: Laboratory:

	Project 1	Hawley Retainer with expansion screw and helix spring/ Study Models - 20%
	Project 2	Fixed Lower Lingual Holding Arch - 15%
	Project 3	Fixed Band and Loop Space Maintainer - 15%
		Observance of demonstrations, health, safety and clean-up - 10%
Lecture:		Quiz - 10%
		Online Quizzes (2) - 8% (4% Each)
		Midterm - 10%
		Final Exam - 12%

Letter Grade

A	=	93-100%
A-	=	90-92.9%
B+	=	87-89.9%
B	=	83-86.9%
B-	=	80-82.9%
C+	=	77-79.9%
C	=	70-76.9%
D	=	60-69.9%
F	=	59.9 and below

* FINAL GRADE WILL BE THE AVERAGE OF GRADES IN LECTURE AND LABORATORY PORTION OF COURSE. The lecture counts as 40% of the grade. The laboratory session counts as 60% of the grade. HOWEVER, STUDENTS MUST ACHIEVE A MINIMUM PASSING GRADE IN THEORY AS WELL AS LABORATORY

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DEPARTMENT OF
RESTORATIVE DENTISTRY

Hawley Retainer/Study Models Rubric

Skill	Exceptional 20 points	Effective 15 points	Acceptable 10 points	Unsatisfactory 5 points	(Did not complete project) 0 points	Student Score
Study Models	Cast trimmed to proper angles and, free of voids and bubbles.	Cast trimmed to proper angles but, contains few air bubbles.	Only one cast is trimmed properly.	Cast are not trimmed to proper angles and, contain a lot of bubbles.	Did not complete study models.	_____.
Labial Bow	Wire is contoured properly and touches at least one point on all teeth. Cuspid loops are correctly placed.	Wire contacts all teeth, but cuspid loops are not contoured properly.	Wire has nicks and does not contact all teeth.	Wire does not contact any teeth and has many nicks. Cuspid loops are not placed and contoured properly.	Did not complete labial bow	_____.
C-Clasp	Clasps follow contour of the gingival and in intimate contact with buccal surface.	Clasps are contoured properly but wire not bent properly over occlusal plane.	Clasps have some nicks and do not contact buccal surface.	Clasps are not contoured properly and have many nicks.	Did not complete c-clasps	_____.

Finished Acrylic With helix Spring & Expansion screw	Acrylic free of Porosity and Proper thickness & Contacts all teeth. Screw and spring Inserted correctly.	Acrylic is too thick or thin. Screw and Helix spring Screw inserted correctly	**Acrylic under Polished. Wires Exposed. Screw and Spring are Correct.**	Acrylic is poorly adaptedto cast, and not trimmed properly. Spring & screw inserted Incorrectly.	**Did not complete acrylic work Spring & Expansion Screw not inserted**	_____.
Repair	Acrylic repaired properly and retainer seats well on cast.	Acrylic is repaired properly but acrylic is not smooth.	Acrylic does not seat well on model.	Acrylic repair is complete but not polished.	Did not complete acrylic repair.	_____.
						Total Points _____.

NEW YORK CITY COLLEGE OF TECHNOLOGY
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DEPARTMENT OF RESTORATIVE DENTISTRY

Lower Lingual Holding Arch Rubric

Skill	Exceptional 25-20 points	Effective 15 points	Acceptable 10 points	Unsatisfactory 5 points	(Did not complete project) 0 points	Student Score
Fitted Bands	Bands are adapted well with minimal spaces between bands & teeth.	Bands are placed correctly, but there is space between bands & teeth.	Only one band is adapted well.	Bands are incorrectly placed (Wrong tooth or upside down)	Did not place bands on model.	_____.
Lingual Arch Wire	Wire rest on cingulum of all anterior teeth, and contacts all posterior teeth.	Wire is bent properly, and contacts most of the teeth.	Wire has nicks, and contacts few teeth.	Wire has many nicks, and does not contact any teeth.	Did not Fabricate A lingual Arch wire.	_____.

Soldering	Soldering is done properly with no sign of porosity. Solder covers entire wire.	Soldering is done properly but contains little porosity.	Solder joint has porosity, and solder does not cover wire on one side.	Solder joint Contains porosity, And solder Does not cover wire on both sides.	Did not solder wire to fitted bands.	_____.
Finishing	Solder joints are smooth and have no scratches. metal is polished to a high luster.	Solder joints are smooth, and free of scratches, but wire is exposed.	Solder joints are not smooth and contain scratches.	Wire work was not polished (Pumiced or High Shined).	Wire work was not finished.	_____.
						Total Points _____.

Student:_____.

NEW YORK CITY COLLEGE OF TECHNOLOGY DEPARTMENT OF
THE CITY UNIVERSITY OF NEW YORK RESTORATIVE DENTISTRY

Fixed Band and Loop Space Maintainer Rubric

Skill	**Exceptional 25-20 points**	**Effective 15 points**	**Acceptable 10 points**	**Unsatisfactory 5 points**	**(Did not complete project) 0 points**	**Student Score**
Fitted Band	Band is adapted well with minimal space between the band & tooth	Band is placed correctly, but there is space between the band & tooth.	Band is not fitted properly. (band is seated to low or high on tooth).	Bands is incorrectly placed (upside down)	Band was not fitted on the model.	_____.
Wire Work	Wire is contoured around edentulous area.	Wire is contoured well, but does not contact tooth.	Wire is not contoured properly and has little contact	Wire is not contoured properly and has not contact with tooth.	Wire was not completed.	_____.

Soldering	Soldering is done properly with no sign of porosity. Solder covers entire wire	Soldering is done properly but contains little porosity.	Solder joint has porosity, and solder does not cover wire on one side.	Solder joint Contains porosity, And solder Does not cover wire on both sides.	Did not solder wire to fitted band.	_____.
Finishing	Solder joints are smooth and have no scratches. metal is polished to a high luster.	Solder joints are smooth, and free of scratches, but wire is exposed.	Solder joints are not smooth and contain scratches.	Wire work was not polished (Pumiced or High Shined).	Wire work was not finished.	_____.
						Total Points _____.

Student:_____.

NEW YORK CITY COLLEGE OF TECHNOLOGY **DEPARTMENT OF**
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EVALUATION CRITERIA - RESD 2415 - ORTHODONTICS

STUDY MODELS:

UPPER CAST:

- Back corner (Left & Right side should be cut at 115 degrees)
- Front slice (Upper Canine Eminence should be cut at 25 degrees)
- Lateral slice or side which closely parallels posterior quadrants should be cut at 65 degrees.

LOWER CAST:

- Back corner (Left & Right side should be cut at 115 degrees)
- Lateral slice or side which closely parallels posterior quadrants should be cut at 55 degrees.
- Total height of upper & lower casts in the transitional or permanent dentitions is at least 2 ¾ inches.

HAWLEY RETAINER WITH EXPANSION SCREW & HELIX SPRING:

- The wire must be contoured to contact at least on point on all of the teeth.
- The wire must be positioned and rest passively in the middle 1/3 of the clinical crown. The wire passing through embrasures must be in intimate contact with the cast.
- The expansion screw arrow must point distally and centered.
- The helix spring must be positioned correctly on the lingual of the right lateral.
- The cuspid loops must contact the canine between the mesial third and the prominence, must not touch the gingival. Cuspid loops must be 2mm past the gingival crest.
- The circumferential clasps must follow the contour of the gingival and be in intimate contact with the buccal surface of the tooth being clasped. The wires passing through the embrasures must be in intimate contact with the cast.
- All acrylic must be well intact. Surfaces must be highly polished with no porosity or bubbles and well adapted to cast; thickness must be 1 ½ - 2mm on linguals of all teeth in the incisal 1/3. Acrylic must be finished to a point above the height of contour of the teeth. Acrylic must cover papillae and cingulum of all anterior teeth. Areas of acrylic that contact teeth must be finished with shelf like appearance of negative angles.

FIXED LOWER LINGUAL HOLDING ARCH:

- Bands must be adapted to teeth with minimal spaces between bands and teeth. Bands should be fitted 1mm cervical to the mesial and distal marginal ridges.
- The arch wire must rest on the cingulum of all anterior teeth.
- The arch wire must contact the lingual aspect of all premolars, just about the gingival margin.
- The arch wire must contact the molar bands on the lingual aspect of the upper half of the bands.
- The solder joints must be finished smoothly and polished, with no visible sign of porosity. Do not polish or grind through solder joints to expose wire. An appropriate amount of solder is to be used.
- The wire must be smooth with no nicks or scratches.
- The metal must be well polished to a high luster.

FIXED BAND AND LOOP SPACE MAINTAINER:

- Band must be adapted to teeth with minimal spaces between bands and teeth. Band should be fitted 1mm cervical to the mesial and distal marginal ridges.
- The wire must contact the second premolar at the middle third of the distal surface.
- The wire must contact the molar band on the lingual and buccal aspect of the upper half

of the band.

- The solder joints must be finished smoothly and polished, with no visible sign of porosity. Do not polish or grind through solder joints to expose wire. An appropriate amount of solder is to be used.
- The wire must be smooth with no nicks or scratches.
- The metal must be well polished to a high luster.

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RESD 2415 - ORTHODONTICS - COURSE OUTLINE

I. INTRODUCTION – ONE LECTURE HOUR

A. COURSE OVERVIEW
1. Accessing blackboard (handout).
2. Web assignments:
   a. Orthodontic study models (handout).
   b. Written assignments (handout).
   c. Reading assignments (handout).
3. Other assignment/s: After completing the web assignment on preparing orthodontic study models, and having finished an exam covering same, you are to complete a set of orthodontic models (handout).

B. INTRODUCTION TO ORTHODONTICS
1. What is Orthodontics?
2. What does an orthodontic technician do?
3. Case studies in normal occlusion and malocclusion.
4. What doctor specializes in treating orthodontic cases?

5. Study Models (Degree cuts on Maxillary and Mandibular)

II. REMOVABLE ORTHODONTIC APPLIANCES – ONE LECTURE HOUR

A. Removable Orthodontic Appliances
- Definition
- Pros and Cons

B. Orthodontic retainers
- Purpose
- Materials (Wire, Acrylic)
- Attachments added to a acrylic retainer (Spurs, Rake, Helix Springs, Soldered Tabs, Expansion Screws, Bite Plate, Posterior Onlay)
- Spring Retainers

C. NIGHTGUARDS
- Purpose
- Bruxism
- Types (All Soft, All Hard, Hard/Soft Combo)

III. ANGLES CLASSIFICATION OF MALOCCLUSION – ONE LECTURE HOUR

A. Class I, pg 6
- Define
- Example, pg 8

B. Class II, pg 7
- Define
- Example
- Division 1 & Division 2, pg 8

C. Class III, pg 7
- Define
- Example, pg 9

D. OTHER DEFINITIONS AND CLASSIFICATIONS
1. Crowding, pg 4
2. Spacing, pg 4
3. Rotation, pg 4
4. Arch symmetry, pg 5
5. Overjet, pgs 8-9
6. Crossbite, pg 10
7. Overbite, pg 11

IV. QUIZ – ONE LECTURE HOUR

TOPICS

1. Removable orthodontic appliances.
2. Angles classifications and other classifications.

V. DESIGN OF APPLIANCES – ONE LECTURE HOUR

A. Types of clasps (Definition, purpose, example,)

- Adams Clasp (Modified Arrow Clasp)
- Circumferential Clasp (C-Clasp)
- Ball Clasp
- Occlusal Rest

B. Types of Labial Bows (Definition, purpose, example,)

- 3 – 3 Labial Bow
- Soldered Continuous Labial Bow
- Wrap Around

VI. PROCEDURE ON WIRE BENDING – ONE LECTURE HOUR

A. Bending a labial bow pgs 23 -25

- Size of wire (0.020)
- Materials (139 pliers, 0.020 wire, lead pencil)
- Procedure

VII. FIXED ORTHODONTIC APPLIANCES - ONE LECTURE HOUR

A. Fixed Orthodontic Appliances

- Definition
- Pros and Cons
- Types (Bilateral, Unilateral)

B. Orthodontic Bands

- Purpose

C. Fixed lower lingual holding arch, pgs 62 - 65

- Purpose
- Materials (Wire, Fitted bands)
- Attachments (Soldered holding spurs, Omega loops)

D. Fixed Nance (Maxillary Holding Appliance) pgs 57 – 61

- Purpose
- Materials (Acrylic, Wire, Fitted Bands)
- Attachments (Rake, Omega Loops)

VIII. FIXED ORTHODONTIC APPLIANCES CONTINUED – ONE LECTURE HOUR

A. Fixed band and loop space maintainer
- Purpose
- Materials (Wire, Fitted band)

B. Fixed habit breaker appliance (Tongue-Crib Habit breaker) pgs 72- 75
- Purpose
- Materials (Wire, Fitted bands)

C. Palatal Expander (RPE or Hyrax)
- Purpose
- Materials (Bands, Screw)

D. Bonded lingual retainer
- Purpose
- Pros and Cons

IX MIDTERM EXAMINATION - ONE LECTURE HOUR (Week 9)

Topics:
- Occlusion
- Wire bending
- Fixed orthodontic appliances
- Removable orthodontic appliances

X. PROCEDURE ON WIRE BENDING – ONE LECTURE HOUR

A. Circumferential clasp (C-clasp) pgs 28 - 30
- Size of wire (0.032)
- Materials (0.032 wire, 139 plier)
- Procedure

B. Adams or Modified Arrow Clasp pgs 31- 33
- Size of wire (0.026)
- Materials (0.026 wire, 139 pliers)
- Procedure

XI. PROCEDURE ON WIRE BENDING – ONE LECTURE HOUR

A. Ball Clasp pgs 34 – 35
- Size of wire (0.032)

- Materials (0.032 wire, 139 pliers)
- Procedure

B. Occlusal Rest
- Size of wire (0.028)
- Materials (0.028 wire, 139 pliers)
- Procedure

C. Arrowhead Clasp
- Size of wire (0.028)
- Materials (0.028 wire, 139 pliers)
- Procedure

XII. APPLICATION OF ACRYLIC – ONE LECTURE HOUR

A. Applying acrylic pgs 53 – 55
- Purpose
- Materials
- Safety
- Procedure

B. Trimming Acrylic pgs 55- 56
- Purpose
- Materials
- Safety
- Procedure

XIII. FINISHING ACRYLIC & METAL WORK – ONE LECTURE HOUR

A. Pumicing
- Purpose
- Materials
- Safety
- Procedure

B. High Shining
- Purpose
- Materials
- Safety
- Procedure

C. Acrylic Repairs & Wire Repairs

XIV. REVIEW FOR FINAL – ONE LECTURE HOUR
1. Review for final
(*Write down any questions you have and we will review them during class)

XV. FINAL EXAM - FIFTEENTH LECTURE SESSION

*BASED ON EVERYTHING COVERED THIS SEMESTER

INSTRUCTIONAL OBJECTIVES: TITLE: ORTHODONTICS-RESD 2415

I. INTRODUCTION OF ORTHODONTICS – ONE LECTURE HOUR

A. CONDITIONS: Given lectures, reading assignments and discussion of the dental specialty of Orthodontics

B. PERFORMANCE: The student should be able to:

1. Identify what is orthodontics.
2. Demonstrate how to fabricated orthodontic study models.
3. Identify what the job of an orthodontic technician.

C. EXTENT & CRITERIA: With at least 70% accuracy at the end of one lecture hour.

II. REMOVABLE ORTHODONTIC APPLIANCES - ONE LECTURE HOUR

A. CONDITION: Given lectures, reading assignments, discussions, and slide presentations of the Angle classification of occlusion

B. PERFORMANCE: The student should be able to:

1. Identify the pros and cons of removable orthodontic appliances.

2. Understand the purpose of an orthodontic retainer & spring retainer.

3. List three types of night guards.

4. Understand attachments that make a retainer active.

C. EXTENT & CRITERIA: With at least 70% accuracy at the end of one lecture hour.

III. ANGLES CLASSIFICATION OF MALOCCLUSION – ONE LECTURE HOUR

A. CONDITION: Given lectures, reading assignments, discussions, and slide presentations of the Angle classification of occlusion

B. PERFORMANCE: The student should be able to:

1. Identify the three types of Angles classification.

2. Identify other types of occlusions and malocclusions.

C. EXTENT & CRITERIA: With at least 70% accuracy at the end of one lecture hour.

IV. QUIZ GIVEN DURING THE 4TH WEEK – ONE LECTURE HOUR

V. DESIGN OF APPLIANCES – ONE LECTURE HOUR

A. CONDITION: Given lectures, reading assignments, discussions, and slide presentations of the Angle classification of occlusion

B. PERFORMANCE: The student should be able to:

1. Identify four types of claps.

2. Identify three types of labial bows.

3. Describe the individual purpose of each type of clasp, and labial bow.

C. EXTENT & CRITERIA: With at least 70% accuracy at the end of one lecture hour.

VI & X & XI. PROCEDURE ON WIRE BENDING – THREE LECTURE HOURS

A. CONDITION: Given lectures, reading assignments, discussions, and slide presentations of the Angle classification of occlusion

B. PERFORMANCE: The student should be able to:

1. Demonstrate how to correctly bend a labial bow.

2. Demonstrate how to correctly bend five types of clasp.

3. Identify the size of the wire used for each clasp.

C. EXTENT & CRITERIA: With at least 70% accuracy at the end of three lecture hours.

VII & VIII FIXED ORTHODONTIC APPLIANCES – TWO LECTURE HOURS

A. CONDITION: Given lectures, reading assignments, discussions, and slide presentations of the Angle classification of occlusion

B. PERFORMANCE: The student should be able to:

1. Identify eight types of fixed orthodontic appliances.

2. Understand the difference between a unilateral and bilateral space maintainer.

3. Identify the purpose for each of the eight fixed orthodontic appliances.

C. EXTENT & CRITERIA: With at least 70% accuracy at the end of two lecture hours.

IX. MIDTERM EXAMINATION GIVEN DURING THE 9TH WEEK - ONE LECTURE HOUR

XII. APPLICATION OF ACRYLIC – ONE LECTURE HOUR

A. CONDITION: Given lectures, reading assignments, discussions, and slide presentations of the Angle classification of occlusion

B. PERFORMANCE: The student should be able to:

1. Identify the materials that are going to be used.

2. Demonstrate how the acrylic is applied to the cast.

C. EXTENT & CRITERIA: With at least 70% accuracy at the end of one lecture hour.

XIII. FINISHING ACRYLIC & METAL WORK – ONE LECTURE HOUR

A. CONDITION: Given lectures, reading assignments, discussions, and slide presentations of the Angle classification of occlusion

B. PERFORMANCE: The student should be able to:

1. Identify the difference between a finished retainer and a non-finished retainer.

2. List the steps required to finish & repair an acrylic plate and metal work.

C. EXTENT & CRITERIA: With at least 70% accuracy at the end of one lecture hour.

XV. FINAL EXAMINATION 15TH SESSION - ONE HOUR

INSTRUCTIONAL OBJECTIVES: ORTHODONTIC- RESD 2415 LABORATORY

I. ORTHODONTIC STUDY MODELS - ONE LABORATORY SESSION

A. CONDITIONS: Given a demonstration and discussion of the construction of orthodontic study models

B. PERFORMANCE: The student should be able to:

1. List the steps required to fabricate study models.
2. Identify the proper angles the casts should be trimmed.
3. Demonstrate how to trim study models to an accepted standard.
4. Describe the purpose for study models.

C. EXTENT & CRITERIA: With at least 70% accuracy at the end of one session.

II. HAWLEY RETAINER - SIX LABORATORY SESSIONS - PGS. 749 - 759

A. CONDITION: Given a demonstration and discussion of the construction and repair of a Hawley type retainer.

B. PERFORMANCE: The student should be able to:

1. List the steps required to make an upper Hawley retainer.
2. Demonstrate how to contour a 3-3 labial bow.
3. Demonstrate how to contour C-claps.
4. Demonstrate how to stabilize the clasps and labial bow on the cast.
5. Demonstrate how to apply and trim acrylic.
6. Demonstrate how to polish a Hawley retainer.
7. Demonstrate how to repair a cracked Hawley retainer.

C. EXTENT & CRITERIA: With at least 70% accuracy at the end of six sessions.

IV. FIXED LOWER LINGUAL HOLDING ARCH (FIRST MOLAR TO FIRST MOLAR) (FOUR LABORATORY SESSIONS)

A. CONDITIONS: Given demonstration and discussion the construction of a fixed lower lingual holding arch.

B. PERFORMANCE: The student should be able to:

1. List the steps required to fabricate a lower lingual holding arch.
2. Demonstrate how to seat bands in an impression.
3. Demonstrate how to contour a lower lingual holding arch.
4. Demonstrate how to solder the finished wire work to the molar bands.
5. Demonstrate how to finish and polish a lower lingual holding arch.

C. EXTENT & CRITERIA: With at least 70% accuracy at the end of the four laboratory sessions.

V. UNILATERAL FIXED BAND AND WIRE SPACE MAINTAINER - FOUR LABORATORY SESSIONS – PGS. 661-663

A. CONDITIONS: Given a demonstration and discussion of the construction of a fixed band and wire space maintainer

B. PERFORMANCE: The student should be able to:

1. List the steps required to fabricate a band and loop space maintainer.
2. Demonstrate how to fit a band on a work model.
3. Demonstrate how to contour a band and loop space maintainer.
4. Demonstrate how to solder the finished Wire to the molar band.
5. Demonstrate how to finish and polish a band and loop space maintainer.

C. EXTENT & CRITERIA: With at least 70% accuracy at the end of four laboratory sessions.