Endo Lab Competency Exam	Step A: Student Bench Number:	Date:					
UNC-Chapel Hill School of Dentistry	Tooth Type:						
1. Access Preparation	Faculty Start Check:	_ Group:					
a. Accurate pulpal & periradicular diagnosis & case diffic	ulty t. Chamber derooted						
b. Correct estimate of tooth length	g. Not excessive removal of tooth structure						
c. Correct determination of estimated working length (EW	L) h. All caries removed						
d. Correct determination of estimated depth of access (EDA) i. Canals located and pulp horns eliminated							
e. Proper access outline form and location j. Straight line access to all canal orifices							
k. Determined need for consultation regarding restorabilit	3 6						
	4 5 6						

- a. Correct determination that files can be negotiated to estimated working length (EWL)
- b. Use of appropriate working length file(s) and Electric Apex Locator
- c. Correct calculation of corrected working length (CWL)
- d. Correct interpretation of canal anatomy
- e. Adequate radiographs, including angled radiograph(s) where appropriate
- f. Step Failures: totally unsatisfactory radiographs; file(s) through apex more than 2 mm
- g. Case Failures: excessive number of radiographs

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3. Crown-Down Preparation/Intracanal Medication/Final Length Determination

- a. Access to apical one-third performed (instrumentation of coronal 2/3 of canal to CWL 2)
- b. No ledges formed
- c. Correctly identified Apical Gauge File (AGF)
- d. Correct estimation of minimum size of Master Apical File (MAF) for each canal
- e. Correct calculation of Actual (Accurate) Working Length (AWL) from AGF Radiograph
- f. Correct interpretation of canal anatomy g. Do not place Calcium Hydroxide
- h. Adequate radiographs, including angled radiograph(s) where appropriate
- i. Case Failures: Perforation, instrument separation, excessive number of radiographs

4. Instrumentation (Cleaning & Shaping)

- a. All canal walls smooth
- b. No other evidence of inadequate debridement (unclean dentin filings & irrigant)
- c. Proper taper and proper spreader penetration
- d. Proper size of MAF (including instrumentation to recommended minimal size)
- e. Proper position of MAF at AWL (determined clinically; may require MAF and/or Master Cone Films)
- f. No ledges formed
- g. Identified apical stop (vs open apex) for each canal (use 1 size smaller file than MAF)
- h. Adequate radiographs, including angled radiograph(s) where appropriate
- i. Step Failures: Gross debris remaining
- j. Case Failures: Perforation, instrument separation, excessive number of radiographs

5. Initiation of Root Canal Filling (Obturation)

- a. Canal(s) completely dried
- b. Appropriate type and size of master cone and accessories selected
- c. Master cone fits within 0.5 mm of AWL with resistance
- e. Adequate radiographs, including angled radiograph(s) where appropriate
- f. Case Failures: excessive number of radiographs

6. Completion and Evaluation of Root Canal Filling (Obturation)

- d. Trial Pack film shows root filling material to prepared length with no voids in apical third of canal
- a. Self-evaluation of acceptable Root Filling (do not place intra-orifice barrier or restoration)
- b. Proper taper
- c. Well condensed without voids
- d. Filled to prepared length
- e. Excess root filling material & sealer removed to proper level [apical to gingival margin (anterior) or to orifice (posterior)]
- f. Adequate radiograph(s) of diagnostic quality
- h. Step Failures: Gross under fill, not filling a prepared canal
- i. Case Failures: Gross over fill, vertical root fracture, excessive number of radiographs

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Step B: Turn in this grade sheet to a Rover for Evaluation after Final Length Determina-

Est. Min. MAF

MB = ML =

DL =

Step C: Turn in this grade sheet to a Rover for Evaluation after Making Master Cone Film.

Step D: Turn in this grade sheet to a Rover for Evaluation after Root Canal Filling.

Step E: After reviewing all your grades, Sign and Print Your Name on the Back of this Grade Sheet, THEN Turn It In so that your Grades can be Recorded.

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Ca- nal	Ref Cusp	EWL (mm)	EDA (mm)	Canal Negotiated (yes/no)	WL File Size (usu. SS)	CWL (mm)	Last VT File Size (at CWL-2)	AGF File Size (usu. NiTi)	AGF File Length (mm)	AWL (mm)	Apical Prep (Stop/Open)	MAF File Size (usu. NiTi)	MAF File Length (mm)	Obturation Acceptable (yes/no)

Competency Assessment of Endodontic Technique Examination Instructions

All students will have Competency Assessment of Endodontic Technique Examinations (endodontic treatment from access opening to completion of filling on a simulated anterior tooth and to final length determination for a simulated molar tooth. Each step of this exercise will be graded and a final grade determined. The grade on each of these examinations must be C or above to pass the course. This final grade for these exams will be calculated as 30% of the final semester grade. All procedures (except making radiographs) <u>MUST</u> be performed in the mannequin; failure to comply constitutes an honor code violation.

READ THESE INSTRUCTIONS CAREFULLY!!!

Complete the Endodontic Pre-Consultation Worksheet (include your Bench Number and Pulpal and Perirapical Diagnosis). All angled films are taken with the cone from the **MESIAL**. Include <u>ALL</u> printed digital radiographs for this tooth.

THE X-RAY MACHINES WILL BE TURNED OFF 15 MINUTES BEFORE THE END OF THE PERIOD!!!

This is a double-blinded competency examination. Group Letters have been randomly assigned to both students and faculty to facilitate grading. Perform your own Self-Evaluation of each step, but this is not formally recorded on the form. Notice that the grade steps have been consolidated.

The following are the specific instructions for the necessary check steps:

- A. Starting Check Instructors will check the following criteria:
 - a. Unaltered Simulated Tooth is mounted in the Sextant in the Accadental ModuPro Dentoform
 - b. Play Doh, Apical Putty, or Red Rope Wax has been placed around the apex(s)
 - c. Initial Pre-Operative Radiograph made (correct orientation and radiographic setting ~.06s)
 - d. Bench # placed on the printed digital radiograph(s), dentoform, sponge and on top of grade sheet
- B. Prepare Access, Negotiate Canal, Make Initial Working Length Radiograph, Determine Corrected Working Length, Instrument Coronal 2/3 of Canal Space, Determine Apical Gauge File Size, Make Apical Gauge File Radiograph, and Determine Actual Working Length. Record the Canal, Reference Point, Estimated Working Length, Estimated Depth of Access, Canal Negotiated, Working Length File Size, Corrected Working Length, Access to Apical 1/3, Apical Gauge File Size, Apical Gauge File Length, and Actual Working Length in the appropriate boxes on the grade sheet. Record the Estimated Minimum MAF for each canal (in the box adjacent to step 3d). Remove excess irrigant. Bring the following to the "Faculty Rover" (will be sent back ungraded if **ALL** these are not included):
 - a. Simulated Tooth in Sextant
 - b. Apical Gauge File(s) **IN TOOTH** at Corrected Working Length
 - c. One Size Larger File(s) than Apical Gauge File set at Corrected Working Length
 - d. **Secure other instruments in sponge** (label if more than one canal)
 - e. All digital radiographs printed in correct orientation (with Bench # only; all identifiers removed)
 - f. Endodontic Pre-Consultation Worksheet filled out completely, including pulpal and periapical diagnoses
 - g. Grade Sheet (with Treatment Record Table completed)
- C. Perform Instrumentation of the Apical 1/3 of the Canal, Determine the Master Apical File Size, Determine if the Apical Preparation is a Stop or Open Apex, Make a Master Apical File Radiograph, and Make a Master Cone Radiograph (without sealer). Remove excess irrigant. Record the Apical Prep, Master Apical File Size, and Master Apical File Length in the appropriate boxes on the grade sheet. Bring the following to the "Faculty Rover" (will be sent back ungraded if **ALL** these are not included):
 - a. Simulated Tooth in Sextant
 - b. Master Apical File(s) set at Actual Working Length
 - c. One Size Smaller File(s) than MAF set at Actual Working Length
 - d. Spreader set at Actual Working Length
 - e. Master Cone(s) IN TOOTH set at Actual Working Length
 - f. **Secure other instruments in sponge** (label if more than one canal)
 - g. All digital radiographs printed in correct orientation (with Bench # only; all identifiers removed)
 - h. Grade Sheet (with Treatment Record Table completed)
- D. Make a Trial Pack Radiograph (with Master Cone, Accessory Cones, and Sealer), then Complete Root Canal Filling and Make Final Post-Operative Radiograph(s). Record whether the Root Canal Fill (Obturation) is Acceptable in the appropriate box on the grade sheet. Bring the following to the "Faculty Rover" (will be sent back ungraded if **ALL** these are not included):
 - a. Simulated Tooth in Sextant
 - b. All digital radiographs printed in correct orientation (with Bench # only; all identifiers removed)
 - c. Grade Sheet (with Treatment Record Table completed)
- E. Print your name, Sign your name, and Print your Student Number in the box below **AFTER** reviewing all of your grades. Then Turn in this Grade Sheet so that your Grades can be Recorded. Place this Grade Sheet in the box located at the Instructor's Station **BEFORE** you leave.

DO NOT COMPLETE UNTIL ROOT CANAL FILLING (OBTURATION) IS EVALUATED.
Student Name (Printed):
Student Name (Signed Pledge):
Student Number:

Provide Each Faculty Grader with: Regular Explorer Endodontic Explorer Endodontic Ruler One Complete Set of Instruments in a Sponge Cotton Pliers Absorbent Paper Points

Printed radiographs must have Student Bench Number, not Student Name since this is a double-blinded competency exam. Use VixWin instead of EPR.

Triangular sponges for students.

Need to collect box tops for Faculty Rovers to transport teeth, files, grade sheets, etc.

Need to have a computer that is capable of viewing (Student Bench #) radiographs.

Announce to students that a random check of the number of radiographs made will be performed. All radiographs made must be turned in at each check step. Not turning in all radiographs will be considered an honor code violation.

During the Practical Examinations:

For Pre-Op Radiographs, use Setting 70kV; 8mA; .06s for the X-ray units in the back For Pre-Op Radiographs, use Setting 63kV; 8mA; .064s for the X-ray units in the room. For Working Radiographs, use Setting 70kV; 8mA; .10s for the X-ray units in the back. For Working Radiographs, use Setting 63kV; 8mA; .10s for the X-ray units in the room.