Dental Technology 111 Fixed Prosthetics II Syllabus

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Classroom: Sciences 313

Course Content:
- Multiple units full contour wax up complete morphology and Gnathological occlusion
- Pontic designs and their applications
- Essentials of metal ceramic substructure design and the biomechanical principles and properties involved.
- Chemistry of metal ceramic alloys
- Fundamentals of spruing, investing and casting. 17 Laws of Casting
- Preparation of metal substructure for porcelain application
- Introduction to all ceramic restorations
- Ceramic Pressing
- CAD/CAM designing and milling
- Ceramic Milling

Course Texts and Forms:
An English Language Dictionary
NADL Air Force Manual, Volume 2
Introduction to Metal Ceramic Technology, Patrick Naylor, DDS, MPH, MS, Second edition
“Simplifying Posterior Dental Anatomy” John Ness CDT Productivity Training Corporation
“Crown & Bridge Anatomical Waxing” John Ness CDT Productivity Training Corporation
“Anterior Anatomy and the Science of a Natural Smile” John Ness CDT Productivity Training Corporation
“Simplifying Anterior Dental Anatomy” John Ness CDT Productivity Training Corporation
8 - Form 2020 Scantron Quiz Strips
1 – Form 882-E Scantron Test sheet
1 - USB drive- dedicated only to Dental Technology courses

Course Materials and Supplies:
PTC WC-1 “A” Carver & ½ Hollenback Ash-free inlay or sculpture wax
PTC Die Hard or Die Seal Bego or Safedent PKT waxing set
PTC WC-2 Wax Spatula & PKT Explorer Crown & Bridge Articulators Foster #57A (8 total)
PTC Die Lube Magnifiers Magniview Vision USA
PTC Dusting Brush Safety Goggles
Bard Parker Knife Masks Isolator Particulate Respirator N-95
Wax Caliper (Miltex) Brasseler USA Metal Finishing Burs by Lee Culp (343.11.703)
Metal Caliper (Miltex or Iwanson) Gloves
Boley Gauge (Miltex) Lab knife Buffalo #7
Electric Waxing Unit Plaster spatulas Buffalo #3R & #11R
Beavertail Shaped Waxing Tip Casting ring kit 1 ¾”
PTC Gold Die Spacer PTC Silver Die Spacer
PTC Dipping Wax Bur Lab #A ½

This course will cover the techniques of fabricating metal-ceramic and all-ceramic single-unit sub-structures as well as the biomechanical principles and properties involved in both single-unit and multiple-unit restorations.

Class Meetings: There will be 30 class meetings this semester. Class will meet from 1:35 p.m. to 6:10 p.m. on Wednesdays and Thursdays.

Note: No classes held Thursday 11/28/2019 Thanksgiving Day.

Final Exam is scheduled for Wednesday, December 11, 2019. This course will progress rapidly. You must make every effort to make it to every class meeting, on time and prepared.
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Attendance: Roll will be taken every day at the beginning of class. In the event you cannot come to class you are required to email Mr. Cohen, your instructor of your absence. It is your responsibility to get assignments and make up all work due to absence.

Classroom Protocol and Workstations: All students must develop standard laboratory work habits at individual bench stations. At start of Class all wax pots must be turned on, desk top clear and ready with waxing instruments and tools ready to work. All books and materials must be off the bench safely under the desk as not to cause any interference or blockage of ingress and egress behind workstations. Any items that do not fit MUST be stored safely out of walk paths.

Laboratory Attire: All students are required to wear approved Dental Lab coat. No student will be allowed to work in laboratory without lab coat.

Breaks: There will be 1 -30 minute break during each class meeting. I expect you to be in class and in your seat at the end of break.

Quizzes: Quizzes will be given on every section of the course, at the beginning of class. There will be no make up quizzes allowed.

Homework: There will be mandatory homework assignments. Failure to complete the homework assignments on time will result in not only a loss of points and a lower grade, but you will not be allowed to participate in the day’s classroom assignments until they are completed.

Projects: There will be a number of separate classroom assignments that MUST be completed in order and to clinical acceptable criteria.

Pour, pin, cut, trim and articulate the following casts:
- PU1A / AL2
- 4606 Special/4600L Gold Splint Bridge
- 4606 Special/4600L Coping Splint Bridge
- CDT Crown & Bridge (CDT C+B) / Opposing
- CDT Ceramic (CDT C) / Opposing
- Triple tray impressions

Full Contour/Diagnostic Wax-ups
- PU1A #8 & #3
- 4606 Special #3 & #4
- CDT C+B #3 - #5
- CDT C #8 & #9

Coping Wax-up
- PU1A #8 & #3 TWO SETS
- 4606 Special #3 & #4

Spruing, Investing and Casting N/P
- PU1A #8 & #3 TWO SETS
- 4606 Special #3 & #4

Spruing, Investing and Pressing Ceramic
- CDT C #8 & #9

Ceramic Pre-soldering
- 4606 Special #3 & #4

N/P Finish for porcelain application
- 4606 Special #3 & #4

CAD/CAM Design
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- PU1A #8 & #3
- CDT C #8 & #9
- 4606 Special #3 & #4

CAD/CAM Milling & Sintering
- PU1A #8 & #3

The following criteria will be used to evaluate your full contour wax-ups and pressed crowns:
- Sealed margins
- Emergence profile
- Contour
- Embrasures
- Connector size and shape (if applicable)
- Anatomy
- Internal completion

Grading Criteria - All copings must be preceded by a full contour wax-up. The following criteria will be used to evaluate your copings:
- Sealed margins
- Collar design
- Support for marginal ridges
- Wax/metal thickness
- Space for the porcelain veneer
- Internal completion

Studying: This course is based upon student learning outcomes. You as a student are responsible for learning. To accomplish this, the class will have several instructional drills. These drills are specifically designed to enforce a single concept. To accomplish this each student will be drilled and will also drill other students.

Behavior: Unprofessional behavior will not be tolerated in class. Cell Phones will not be allowed in class. Other electronic devices will not be tolerated in class. The classroom is not a place to meet you friends of family. Refer to the student handbook and the Dental Technology departmental rules and regulations for specifics.

Important! Drop Date Information
The deadline to drop without a “W” is the last day of Week 2 (of the semester), which is Sunday, September 8, 2019 for Fall 2019. If you must drop a course, drop before the specified deadline for dropping a class without a grade of “W.” Dropping after Week 2 will result in a “W” on your transcript. Effective July 1, 2012 students will only have 3 attempts to pass a class. If a student gets a "W" or grade of "D", "F", "I", or "NP" in a class, that will count as an attempt. A student’s past record of course attempts district wide will also be considered. Therefore, before the end of Week 2 you should carefully consider if you can reasonably manage this course with the other factors in your life (e.g. work, family, course load). If you think you will not be able to complete this course with a C or better, you should drop no later than November 17 2019. If you have any questions, please don't hesitate to talk to me. You may also see a counselor in the Counseling Center.

Students with a verified disability who may need a reasonable accommodation(s) for this class are encouraged to notify the instructor and contact the Office of Special Services (CH 109, 323-4000 X2270) as soon as possible. All information will remain confidential.

If you need help paying for books and other college expenses, call the Financial Aid Office at
(323) 953-4000 extension 2010,
or see them at Student Services Village room 117
http://www.lacitycollege.edu/stusvcs/finaid/

Student Learning Outcomes
By the end of this course the student will be able to:
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1. Morphological and functional diagnostic wax-ups of anterior and posterior restorative units
2. Single units metal substructures for porcelain fused to metal restorations.

3. Single unit ceramic substructures for all ceramic restorations.
4. Read, interpret and apply prescriptions for fixed restorations

To the following clinically acceptable standards:
- Sealed margins;
- proper proximal contacts;
- physiologically acceptable contour;
- gnathologically correct occlusal anatomy.

Design and fabrication of single units metal ceramic substructures. To the following clinically acceptable standards:
- designed to support uniform ceramic veneer
- adequate thickness for prescribed rigidity

And scored by the following rubric:
- **Exemplary** - meets clinical standards in all areas
- **Acceptable** - Meets clinical standards with no more than two minor errors in any area other than margin
- **Unacceptable** - Any open margin and/or more than 2 errors in any other area(s)

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

1. **Define, describe and apply the following safety items:**
   - Common sense.
   - Laboratory equipment.
   - Hand instruments.
   - Emergency procedures.
   - Dressing for laboratory work.
   - Disinfecting and cross contamination.

2. **Identify, distinguish and compare different types of fixed prosthesis with specific characteristics and applied designs including:**
   - defining each component of a multiple units fixed prosthesis
   - identifying and comparing different types of pontics with applied clinical characteristics and types of dental materials used based on requirements.
   - identifying and comparing different types of connectors with applied clinical characteristics.

3. **Identify, describe, discuss, compare and evaluate:**
   - ceramic and non ceramic substructure designs along with the biomechanical principles and proprieties applied.

4. **Identify, describe discuss:**
   - the chemistry of metal ceramic alloys, classification and composition of casting alloys.

5. **Identify, define, describe, discuss, and apply:**
   - the fundamentals of spruing, investing and casting including the laws of castings. and soldering techniques.

6. **Identify, describe and apply:**
   - basic steps in the preparation of metal substructure for porcelain.
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7. Identify, define, describe and apply the following concepts of anatomical contour:

- Three elements of contour
- Relationship between functional consistency and anatomic consistency
- Proximal contour as related to the proximal contact area, and specific embrasures concept of marginal ridge compatibility, in relation to occlusal centric contacts
- the width of the facial and lingual embrasures as related to excursion of food.
- smile design components

Construct standard functionally, anatomically accurate and esthetically pleasant fixed prosthetics

1. Analyze, design and apply the principles of posterior cast splint design and fabrication as follows:

- full contour wax up
- Spruing and investing as per specific characteristics requirements
- Casting using technique metal as it has similar proprieties with gold alloys
- Finishing metal restorations
- Soldering the 2 units
- Splint metal finish and polish

2. Analyze, design and apply the principles of ceramic copings design and fabrication as follows:

- diagnostic wax up and matrix
- substructure wax up or full contour cut back
- spruing, investing and casting
- metal finish

3. Analyze, design and apply the principles of ceramic full contour crown design and fabrication as follows:

- full contour wax up
- spruing, investing and pressing
- Ceramic recovery

4. Analyze, design and apply the principles of digital design and fabrication as follows:

- digital acquision of impression
- digital perimeter setting
- digital design
- digital milling
- sintering

5. Analyze, apply, design and construct three unit anterior bridge diagnostic wax up wax-up, modified ridge lap pontic design incorporating the clinical morphology and functional standards.
   Analyze, design and apply the principles of metal ceramic design and fabrication as follows:

- diagnostic wax up and matrix
- substructure wax up or full contour cut back
- spruing, investing and casting
- metal finish

6. Analyze, apply, design and construct posterior three unit maxillary bridge diagnostic wax up wax-up, modified ridge lap pontic design incorporating the clinical morphology and functional standards.

   Analyze, design and apply the principles of metal ceramic substructure design and fabrication as follows:
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- diagnostic wax up and matrix
- substructure wax up or full contour cut back
- spruing, investing and casting
- metal finish

7. Analyze, apply, design and construct

- diagnostic wax up for a clinical impression incorporating the clinical morphology and functional standards.