Department Curriculum Review for Operative

I. Department Report
II. Questions and Responses

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Curriculum Review presented to Curriculum Committee, June 2015.

Date: 20 February 2015

Department: Operative

I.	**Department Mission Statement: *development a statement if none exists; also.***

(as posted on departmental website)

Our Mission

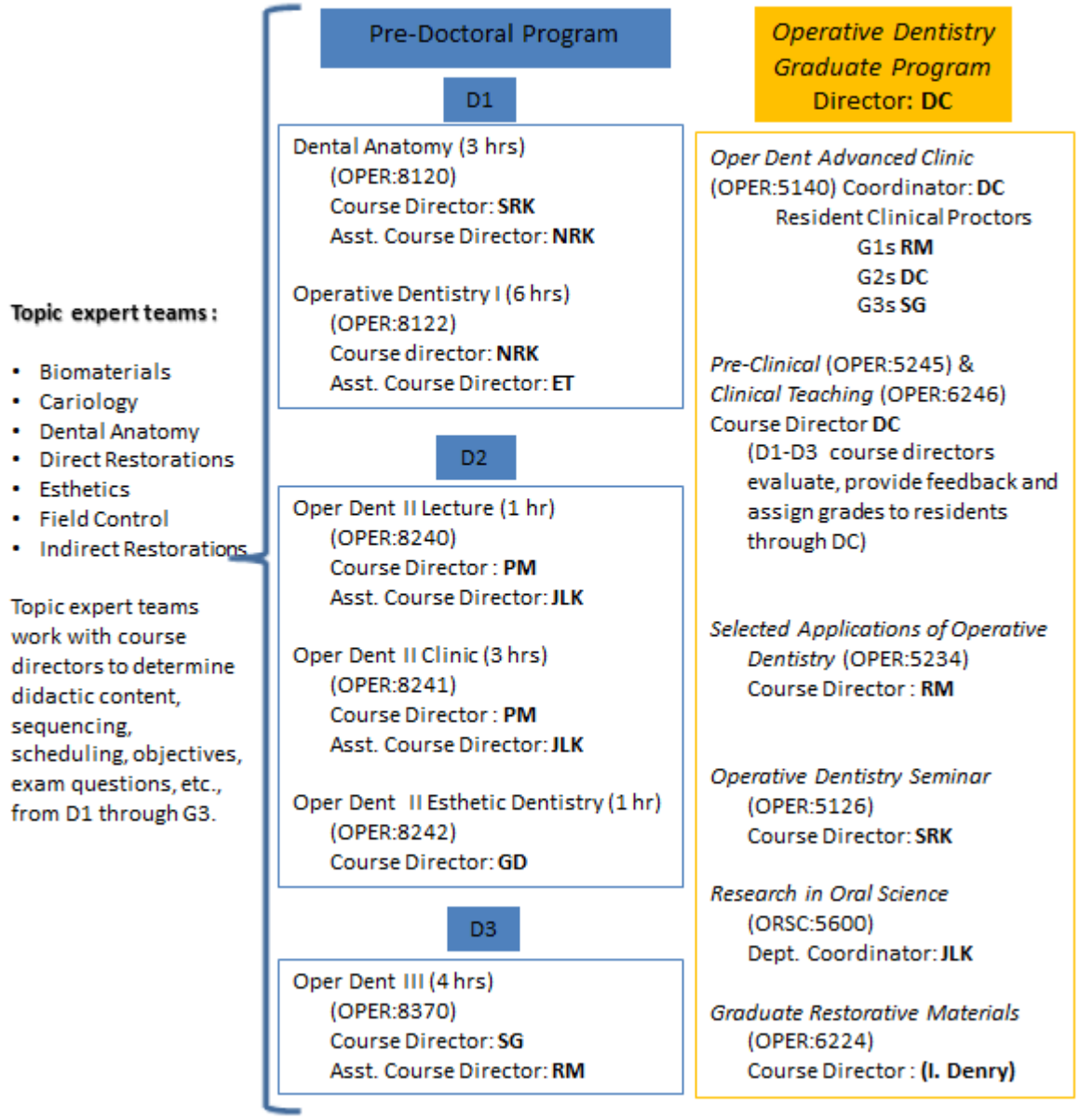
To support the academic goals of the institution through teaching, patient care and research. Our primary goal is to educate dental students, using best available evidence, to achieve and maintain optimal patient oral comfort, function and esthetics through risk-based diagnosis, prevention and minimally-invasive treatment of caries and hard tissue lesions.

II.	**Describe how the department curriculum addresses the *Collegiate Characteristics of a College of Dentistry Graduate***

The operative departmental curriculum addresses the *Collegiate Characteristics of a College of Dentistry Graduate* by keeping these expected characteristics foremost in our minds as we provide the basic and clinical knowledge and technical skills necessary to address our stated mission. High quality care for the individual patient demands that beyond the required knowledge and technical skills the additional stated characteristics are taught, modeled and confirmed in order to provide comprehensive, compassionate and individualized care to each and every patient. Self-assessment, judgment, ethical and professional behavior are immediately emphasized with students during the D1 year. Upon entering the clinic students are exposed to a student learning guide and assessment form that encompasses all Collegiate Characteristics in a consistent format from D2 through D3 years.

III. Include department organizational structure and how it fulfills the department's mission and *predoctoral accreditation standards*. Attach appendix

Department of Operative Dentistry 2014-2015 Team Teaching



DC = Deb Cobb; ET = Erica Teixeira; GD = Jerry Denehy; JLK = Justine Kolker; NRK = Natalia Restrepo-Kennedy; PM = Patty Meredith; RM = Rodrigo Maia; SG = Sandra Guzman-A.; ; SRK = So Ran Kwon

IV.	Provide profiles for each OPER course: *additional rows can be added as needed.*			
Year	**Course No.**	**Course Director/Co-Director**	**Format:** *lecture, seminar, PBL, CBL, simulation lab, clinical, etc.*	**Faculty:Student Ratio**
See Appendix I				
D1	8120 Anatomy	SRK/NRK	Lecture, Demo, Sim Lab	1:10-12
D1	8122 Lec & Lab	NRK/ET	Lecture, Demo, Sim Lab	1:11-12
D2	8240 Lecture	PM/JLK	Lecture, Demo, Sim Lab	1:80
D2	8241 Clinic	PM/JLK	Clinical, Sim Lab	1:4
D2	8242 Esthetics	GD	Lecture, Demo, Sim Lab	1:13-14
D3	8370 Lec & Clinic	SGA/RM	Lecture, CBL, Clinical	1:20 & 1:5

V. Describe how *horizontal* curriculum integration is achieved with other departments, courses, and/or learning activities. Note current achievements and highlight areas, topics, or disciplines that need further improvement.

Please see appendix: *Oper Curriculum topics.xlsx*

Please read from top to bottom of pages for 'horizontal' integration. Colored font highlights FY15 changes and areas for further consideration and improvement.

VI. Describe how *vertical* integration across D1 through D4 courses, including with other departments and/or learning activities. Note current achievements and highlight areas, topics, or disciplines that need further improvement.

Please see appendix: *Oper Curriculum topics.xlsx*

Please read from left to right on pages for 'vertical' integration. Colored font highlights FY15 changes and areas for further consideration and improvement.

VII. Describe efforts in faculty development to calibrate teaching styles, techniques, outcomes assessment methods and a unified grade scale.

We have been working on mapping our curriculum topics and coming to uniformity on teaching and evaluation since shortly after I became DEO. Activities initiated include:

- The last Wednesday noon of every month is reserved for curriculum discussions
- Operative best practices and materials instructions have been added to our departmental website and widely disseminated
- Teaching teams and topic expert teams have been created
- Patient case scenarios have been added to the annual teaching orientation day that occurs the week immediately preceding the start of the academic year
- Each course director meets with their respective instructors before beginning each course, for example, an intensive waxing course is given to all incoming residents to prepare them for teaching in dental anatomy
- Resident instructors receive post-doctoral course credit hours for pre-clinical and clinical teaching and are evaluated and graded by course directors

- The electronic learning guide and assessment from is consistent between D2 and D3 clinics and our department has been a strong advocate for a single collegiate methodology.

VIII. Does the curriculum mapping system appropriately reflect what you teach in the discipline specific predoctoral curriculum? List the information gap(s).

**Verify all courses have been mapped in the Collegiate "Course Mapping"*
Confirmed

The curriculum mapping system is helpful from a general perspective, such as, 'How is operative contributing to developing the desired *Collegiate Characteristics of a College of Dentistry Graduate* in our students?'; however, this system is not detailed enough for the evaluation of and development of day to day teaching plans and activities.

Our departments most constructive and stimulating discussions for the identification of educational gaps and unnecessary redundancies, for example, have come through our development of this first draft of our operative curriculum topic mapping (See appendix). If these topics could be shared, reviewed and modified across departments we think further improvements in our collegiate curriculum can be realized. Within operative we'll be using this topic mapping on an ongoing basis as our mechanism for identification and discussion of planned continuous improvement, for example, (1) full implementation of the principles and practices of the International Caries Classification and Management System (ICCMS), (2) introduction of new early caries diagnostic technologies, (3) patient specific caries management recalls and follow up, etc.

IX. What major issues face the department that may require change(s) to the predoctoral curriculum?

- We lack the resources to support students in making radiographs when they cannot do this independently upon entering the junior clerkship.
- ICDAS codes and staging in Axium and used across COD along with ICCMS conformity across COD.
- Please refer to section XIII.

X. Describe curriculum changes that are a result from student feedback.

This is documented in each department course review.

Our department has been very responsive to student feedback in some cases may be overly responsive, for example, increasing the number of instructors in the simulation clinic to 8 in response to student's complaints that they had to wait too long for help at their pod. Although this staffing level would be wonderful, we simply do not have this teaching capacity and are currently using 7 faculty with one instructor used as a floater to help keep pace with individual demand. The point being, we take student feedback very seriously and are continuously trying to improve our program.

XI. Is the scope of the discipline-specific treatment procedures taught appropriate for a new graduate, general dentist? Include references for inclusion/modification/deletion relative to the current state of private practice, i.e. insurance data, etc.

The majority of annual dental expenditures, $111 billion in 2012 not including unmet health needs, are for caries disease management. We could do more in our curriculum to better address this disease. In fact, diagnostic, preventive, restorative, and adjunctive general service procedures (egs. pulp capping, desensitization, occlusal gaurds, enamel abrasion and bleaching) account for 86% of all services rendered. Relative to specific restorative material placement, our student instruction and clinical procedural experiences are in line with this ADA 2005 Survey of Dental Services Rendered (see Appendix topic "Clinical Experiences"). The overall dental services rendered nationally are primarily in reaction to third party reimbursement approval which, subsequently, falls short in the areas of diagnostics, prevention and behavioral management services to the detriment of the public. Our curriculum, in part, mirrors this experience. Operative dentistry, working with the rest of the college, must do better in the areas of diagnosis, prevention and changing patient behaviors as we all work together to educate new dentists who will influence their dental organizations and public officials to improve access to care and the quality of dental care.

How and when our discipline specific procedures are introduced to the students is a good topic for ongoing discussion. We have aggressively implemented and evaluated digital comparison technologies of student work versus a master copy in hopes to improve evaluation objectivity, reduce faculty teaching loads and provide students with on-demand self-directed feedback. If this proves useful and valid then a different approach could be taken to introducing students to caries disease management. That is, currently they prepare relatively large prescribed geometric forms on plastic teeth, and then upon entry to clinics, we must, unlearn these skills (with exception for dental amalgam) for a minimally invasive defect specific management. If digital comparison proves successful there is potential for an introductory self-guided learning program to develop psychomotor skills. Once students have shown competency in basic psychomotor skills we could then begin with disease management in real or simulated caries lesions and non-carious defects. In this manner there may be less to unlearn once they enter the clinics.

Emphasis must first be on prevention of disease; if the caries lesion cannot be prevented then a thoughtful approach to non-surgical medical management is necessary; if irreversible damage to the tooth occurs, then a minimally invasive surgical management of disease is required. When disease is not prevented, nor healed, nor surgically managed in the most long-lasting conservative way possible the tooth and patient is set on a course of repeated and repeatedly more aggressive and expensive clinical procedures. Our initial introduction to these surgical skills may be reinforcing the traditional cut first and cut large approach of the past. Attainment of basic surgical hand skills could be somewhat separated from education of the disease and disease management.

XII. Include comments to indicate department efforts toward a prospective analysis of the predoctoral curriculum and list other changes under consideration that may require collegiate support.

Our team teaching philosophy and curriculum discussions drive our prospective analysis of the predoctoral curriculum. As shown in section III, our organizational structure has assistant course directors for all courses and programs. This approach has several advantages, the main being enhanced communication within the department. As well as being curriculum topic expert team members all faculty are available to participate in any other operative course.

Please also see sections VII and XIII.

For the current academic year we have fully scheduled OPER:8242 into the OPER:8240/8241 Tuesdays, with multiple goals to include: (1) enhancing student focus on the operative educational program within the demands of D2 year, (2) improving course and faculty scheduling flexibility, (3) decompressing faculty time, and (4) decompressing student time. For 2015-2016 we want to integrate OPER:8240/8241/8242 into a single Operative Dentistry II course (OPER:8240) that has didactic, laboratory and clinical modules or components. All components must achieve a passing grade to successfully pass the overall course. The laboratory component "Operative Dentistry minimally-invasive and esthetic technique" will include the exercises that were previously required as parts of didactic OPER:8240 and clinical OPER:8241 with the addition of esthetic dentistry OPER:8242 exercises. This clinical component will remain P/F.

Additionally for 2015-2016 we would like lecture and discussion time from 8:00AM to 8:30AM on Thursdays prior to patient experiences in Operative, Radiology and Preventive clinics. The D2 Operative/Preventive/Radiology/Oral Diagnosis/Record Audit/Standardized patient and lecture/simulation laboratory schedule is exceedingly complex and review of this approach with Operative's Thursday 8 – 8:30AM request would be greatly appreciated. This 30 minute time period could be a wonderful opportunity for all departments involved with the D2s to engage the entire class.

The record auditing puts strain on each student's partner clinician as the novice student must work without an assistant during their clinic time. A new time or approach would be greatly appreciated.

Greater student readiness and efficiency in obtaining radiographs for the operative clinic would permit more operative procedures to be completed by students. Currently by the time a radiograph is obtained and diagnosis and planning is completed the student is unable to complete the operative procedure and must reschedule the patient.

XIII.	**What resources directly related to curriculum management would facilitate your ability to fulfill the teaching mission? *(Time, space, faculty development, course support, etc.)***

D2 Oper – Thursdays from 8:00 – 8:30AM available for instruction
D2 Oper – Simplified and more flexible Tues and Thur AM scheduling
D2 Oper – Improved student readiness or support to make radiographs
D2 Oper – Restructured single Oper Dent II course OPER:8240
D3 Oper – Students progressing toward competency or obtained competency to make radiographs
D3 Oper – Students "progress toward competency" in clerkship and are deemed competent in D4 year
D1-D3 Oper – Digital Lab Tech support
D1-D3 Oper – Continued tutor support
D1-D3 Oper – Continued video production and editing support
D1-D3 Oper – Continued support of teaching administration time for faculty course directors
D1-D4 COD – Collegiate topic mapping modeled after Oper curriculum topic mapping or a searchable curriculum topic mapping database
D1-D4 COD – Simple and continuously available access to all ICON courses for all faculty and students
D1-D4 COD – A single collegiate clinical learning guide and evaluation form
D1-D4 COD – Continued faculty development support from central administration
D1-D4 COD – ICCMS codes/staging in Axium and faculty training for implementation of collegiate caries management curriculum

Instructions: A separate report should be completed for each course by the Course Director.

Date: February 2, 2015

Course: OPER:8120:0800 (082:120) Dental Anatomy

Completed by: So Ran Kwon

A. Describe the format for the course and list the course goals and evaluation method utilized.	
Course Format: The course consists of a didactic lecture and a practical laboratory component.	
Outcome	**Assessment/Evaluation Method**
Knowledge of: dental anatomy, terminology, and developmental chronology by demonstrating a mastery of the content of the text, *Concise Dental anatomy and Morphology*.	Computer generated multiple choice questions (n=11) Tooth Identification exams (n=3)
Psychomotor skills by: using the wax addition technique proficiently to reproduce natural tooth contours and further apply these skills in their future clinical work.	Practical competency on full contour tooth wax-ups (n=3)
Cognitive skills by: being able to converse with peers and dentists, using proper terminology and also critically evaluate the quality of laboratory and clinical work.	Self-Evaluation Sheets (n=3) Turning point exercises (n=3)
Self-improvement/self-directed learning by: the use of self-evaluation, digital feedback and the desire for continued improvement during each session.	Evaluated through improvement on daily exercise check-offs and individual instructor and digital feedback.

B. Summarize student evaluations (most recent 2-3 years) for each course and note changes as a results of feedback.	
Student Feedback	**Outcome**
See Table 1. Below	Instructions on laboratory assignments were made clearer by remaking step by step powerpoints to relate better to the newly introduced Kilgore model and additionally creating video clips on proper wax-up of occlusal anatomy (84.2→96.0).
	Criteria for grading assignments were made clearer by grading the daily exercises and reviewing the criteria with individual instructors (69.7→94.7).
	Fair evaluation and feedback on student's performance was improved by extra discussion and calibration sessions of instructors prior to the start of the course (four 3 hour sessions) and by addition of the objective digital feedback that students could utilize when instructors were not available (65.8→81.4).

Table 1. Summary of Student Evaluations by Surveyed Item and by Year [OPER:8120:0800]

	2013-2014*	2014-2015*
General Course Evaluations Lecture		
1. The course objectives were clear	90.2	98.7
2. Overall, the course was well organized	90.1	96
3. I understand the relevance of this course material to my future professional activities	100	98.6
4. The examinations fairly assessed my knowledge of the material presented in lectures and reading assignment	83.1	89.4
General Course Evaluations Laboratory		
1. Instructions for laboratory assignments were clear	84.2	96
2. Criteria for grading assignments were made clear	69.7	94.7
3. My performance was fairly evaluated and feedback on my performance was sufficient	65.8	81.4
4. There was sufficient time allocated to complete assignments	84.2	89.3

* Percentage of Addition of "Strongly Agree" & "Agree" Responses

C. Describe how this course builds on previous courses and/or how the skills, knowledge & values developed in this course provides foundation for subsequent courses.
The Dental Anatomy course is one of the first courses that freshmen take at the COD and as such does not build on previous courses. It provides a solid foundation for most subsequent courses by addressing the goals/outcomes that are listed in section A.

D. Describe if this course contains planned redundancies and the redundancies relate to previous courses.
N/A

E. Describe planned redundancies if present in this course and relation to previous courses.
N/A

F. List the CODA standards addressed in this course?

CODA Standard	**Addressed through:** *(reference course goal/objective)*
CODA 2-9 & 2-10	The student must be able to properly critique the tooth morphology by identifying errors in his/her wax tooth reproduction with 60% accuracy, as formative assessed by interchange between student and faculty during the daily sessions.
CODA 2-11&2-12	The student must be able to wax full crowns of three teeth to proper morphology from plastic stubs using techniques developed in the preliminary wax exercises and daily work to a satisfactory level, in three hour time periods as a formative assessment. The student must pass each of the three waxing competency examinations at a 60% level or above. The student will re-take each failed examination until passing level is achieved.
CODA 2-9, 2-10, &2-19	The student must be able to wax one onlay of a mandibular molar to a satisfactory level as determined by digital evaluation as a formative assessment. The mandibular molar will be digitally graded by the student and must achieve a passing grade to complete the course.
CODA 2-11 & 2-12	The student must be able to identify permanent teeth by universal number during three separate examinations, using observation of computer images as a summative assessment. The student must pass each of the three examinations at a 60% level or above. The student will re-take each failed examination until passing level is achieved.
CODA 2-11&2-19	The student must demonstrate knowledge of the material contained in the textbook, *Concise Dental Anatomy and Morphology*. The student must pass each of 11 individual examinations, each comprised of 20 multiple choice-type questions based upon the different units of the textbook at a 60% level or above as a summative assessment. The student will re-take each failed examination until passing level is achieved.

G. Verify the course follows the COD Syllabus e-template ☑

H. Verify the course has been mapped into the collegiate "Course Mapping" tool ☑

I. List potential course changes and note issues or conflicts that require resolution in order to make a significant change.

Overall students greatly appreciated the extra Wednesday session and additional tutoring that allowed for tailoring teaching to students' abilities. Many students felt that it would be helpful to have more tutoring sessions - i.e. not limiting tutoring to students that failed the competency. With the continuous support from the Office of Student's Affairs we would like to continue this tutoring and expand it to benefit more students. Special thanks to Dean Solow for her wonderful support!!

With the new incorporation of digital scanning and evaluation software, there is still a great need to verify the validity, benefits and limitations of these systems. We would like to continue with the active incorporation of this technology to provide evidence regarding the advisability and feasibility of introducing digital grading in the pre-clinic courses that might also benefit other institutions trying to implement innovative digital technology in their teaching and grading system. Special thanks to the Technology Committee for their great support!!

Department Course Review

Instructions: A separate report should be completed for each course by the Course Director.

Date: 2.3.2015

Course: OPER:8122:0800 (082:122) Operative Dentistry I

Completed by: Natalia Restrepo-Kennedy

A. Describe the format for the course and list the course goals and evaluation method utilized.	
Course Format: This course is comprised of didactic and laboratory components.	
Outcome	**Assessment/Evaluation Method**
• Operator and patient positions for operative procedures in all four quadrants of the mouth through simulated patient experience.	Daily activity improvement exercise with check-offs from an individual instructor Didactic exam (n=4)
• The basic principles of traditional and conservative cavity design for dental amalgam, resin-based composite, and glass ionomer preparations.	Practical Exam (n=4) Didactic Exam (n=4)
• The principles, terminology, instruments (rotary and hand), materials and techniques used in the practice of Operative Dentistry.	OSCE (n=1)
• Caries removal and pulp protection, prior to restorative procedures.	Daily activity exercise with check-offs from an individual instructor
• Mechanical and biological properties of dental amalgam, resin-based composite, glass ionomer and calcium hydroxide dental materials.	Evaluated by Didactic exams (n=4)
• Dental amalgam, resin-based composite, and glass ionomer restorative procedures.	Practical Exam (n=4) Didactic Exam (n=4)

B. Summarize student evaluations (most recent 2-3 years) for each course and note changes as a results of feedback.	
Student Feedback	**Outcome**
General Course Evaluation Lecture: 2013-2014 1. The course objectives were clear: 94.8% 2. Overall the course was well organized: 91.3% 3. I understand the relevance of the course material to my future professional activities: 100% 4. The examinations fairly assessed my knowledge of the material presented in learning and reading assignments: 89.6%	Laboratory assignments were made on power point with step-by-step procedures followed by videos to introduce the new Kilgore models. (2014-2015) New caries teeth on the Kilgore models were introduced followed by step-by-step power points.
General Course Evaluation Laboratory: 2013-2014 1. Instructions for laboratory assignments were clear: 100% 2. Criteria for grading assignments were clear: 100% 3. My performance was fairly evaluated and feedback on my performance was sufficient: 95.2% 4. There was sufficient time allocated to complete assignments: 100%	Since the course is still in process a new evaluation was not performed. The only evaluation forms were from the years 2013-2014.

C. Describe how this course builds on previous courses and/or how the skills, knowledge
The Operative I course is the foundation for the first year students, which provides them with basic knowledge of the science of operative dentistry. During the seven months of the course the students will develop the psychomotor skills necessary to perform basic operative dentistry to a clinically acceptable level. In order to continue with the Operative I course, the students will need to pass satisfactorily Dental Anatomy course. Also this course must be passed prior to proceeding to the D-2 Operative Dentistry course.

D. Describe if this course contains planned redundancies and the redundancies relate to previous courses.
N/A

E. Describe planned redundancies if present in this course and relation to previous
N/A

F. List the CODA standards addressed in this course?	
CODA Standard	**Addressed through:** *(reference course goal/objective)*
CODA 2-23F	Didactic Course Competency: Evaluated as Summative Assessment. The student must be able to identify the biological basis of cavity preparation. Also must need to identify the classification of cavities and/or tooth surfaces and the component part of a prepared cavity. Furthermore, the student must differentiate between the cavity preparation and materials used to restore, such as amalgam, resin-based composite and glass ionomer. The physical and biological properties of the different materials, their placement, finishing and polishing. The student must also be able to identify instruments by name and use and identification of each part of its formula. The student must describe the basic positions for the operator and the patient working in all four quadrants, while performing operative dentistry procedures. The student will need to pass with a 70% level or above. A re-take exam will be necessary until a passing score is achieved.
CODA 2-23F	Simulation Course Competencies: Evaluated as Formative Assessment. The student must be able to prepare Class I, II, III, IV and V cavities in a manikin teeth and restore them with resin-based composite, amalgam or glass ionomer restorations in a simulation position. The student must be able to remove caries from extracted teeth, place cavity liners and place Amalgapin or other non-pin retention

G. Verify the course follows the COD Syllabus e-template ☑

H. Verify the course has been mapped into the collegiate "Course Mapping" tool. ☑

I. List potential course changes and note issues or conflicts that require resolution in order to make a significant change.

Possible introduction of digital grading in the near future. Prep-check (Cerec) and Compare (E4D) are primarily intended for crown evaluation. Both softwares are useful for dental anatomy and prosthodontics preclinical courses, but not yet for the Operative preclinical course.

Tutoring is always appreciated for the students. Continuing helping the students that are struggling the most. At this point a student evaluation for this year is not available so we will need to wait for more accurate information on the matter.

Department Course Review

Instructions: A separate report should be completed for each course by the Course Director.

Date: Feb 4,2015

Course: OPER:8240; OPER 8241;(OPER:8242) Operative Dentistry II

Completed by: Patty Meredith

A. Describe the format for the course and list the course goals and evaluation method utilized. See attached Manual page 10	
Course Format:	
Outcome	**Assessment/Evaluation Method**

B. Summarize student evaluations (most recent 2-3 years) for each course and note changes as a result of feedback.	
Student Feedback	Outcome
Improved communication and availability of course director	Prompt responses to student emails Increased detail in course schedules Increased meetings with course student advisory committee
Increase patient number and quality of experiences	Course director attends most OD orientations to increase treatment planning of patients in minor operative
Streamline and improve CAD/Cam experiences	Provide more structure to Sim clinic CAD/Cam experience
Decompress student/faculty schedules	Integration of Esthetic Dentistry course

C. Describe how this course builds on previous courses and/or how the skills, knowledge & values developed in this course provides foundation for subsequent courses.

OPER8240 and OPER8241 are horizontally integrated with several other departments and courses. This integration was clear when renovations in the building affected the sophomore operative schedule for 2014-15. The sophomore courses in preventive dentistry, radiology, oral diagnosis and standardized patients are integrated not only by schedule but also by content. Sophomore students are participating in their first patient experiences integrating aspects from each course in the total patient care. This is a unique student experience at the University of Iowa. When students complete the sophomore year, they enter the junior clerkship rotations with a wide array of basic clinical skills that allow them to move toward mastery of higher level skills more quickly. Sophomore students must integrate knowledge of basic science/ systemic disease states, pharmacology of patient medications, delivery of local anesthesia, dental treatment modalities and materials along with critical thinking and decision making and communication skills all in the new environment of the dental operatory. Further improvement could be achieved if all sophomore students could complete basic radiology competency and a more in depth introduction to treatment assessment and planning prior to beginning clinical care. Scheduling has been the most significant obstacle to this goal

D. Describe if this course contains planned redundancies and the redundancies relate to previous courses. See Oper topic curriculum mapping and E below

E. Describe planned redundancies if present in this course and relation to previous courses.
Sophomore operative, both didactic and clinical components, build on basic concepts presented in the freshman year and emphasize clinical application of these concepts. Course content and presentation are coordinated from D1-D3. Further improvement could include continuation of operative concepts in the D4 year including rubber dam usage and integration of caries risk assessment.

F. List the CODA standards addressed in this course? Manual page 10	
CODA Standard	**Addressed through:** *(reference course goal/objective)*

G. Verify the course follows the COD Syllabus e-template ☒

H. Verify the course has been mapped into the collegiate "Course Mapping" tool. ☒

I. List potential course changes and note issues or conflicts that require resolution in order to make a significant change.
A time schedule that would allow all sophomore students to complete both a basic clinical proficiency in radiology course and a patient assessment and treatment planning for operative dentistry course prior to clinical operative dentistry experiences would enable me to fulfill our teaching mission more efficiently. Support for the education of students in CAD/CAM technology is needed to bring these experiences to students. An effort is currently underway to provide a new lab person for this role. My concern is that there may be many more demands for this person that time will allow

Department Course Review

Instructions: A separate report should be completed for each course by the Course Director.

Date: January 2015

Course: OPER:8370 Operative Dentistry III

Completed by: Sandra Guzman-Armstrong

A. Describe the format for the course and list the course goals and evaluation method utilized.

Course Format:

Operative Dentistry III has a clinical and didactic component that plays a key role in disease control and the integration of comprehensive care of our patients. Emphasis is placed on preventive therapies for caries disease and minimally invasive management.

In the ***daily clinical environment***, the student and faculty utilize a comprehensive patient assessment and treatment planning process to insure that preventive and restorative procedures provided are appropriate for the patient's comprehensive care. The student emphasizes disease control and clinical skills, along with critical thinking and patient management. Students are expected to progress toward competency in the restoration of teeth with the appropriate restorative materials and understand the physical and biological principles upon which these procedures are based. Students must also demonstrate professionalism and apply knowledge of patient management and disease control to the clinical care process.

The ***didactic component*** of this course will assist in the student progression toward this goal as they improve their knowledge base, cognitive and clinical skills and self-directed learning proficiency. This portion consists of lecture/seminars, self-study, group assignments and active learning discussions.

Evaluation method:

The following grading scale is applied with the highest individual score representing 100%"of half of the junior class in a given semester. Based upon the highest grade representing 100% the following grading scale does apply:

92-100	A	(A+ to A-)
83-91	B	(B+ to B-)
70-82	C	(C+ to C-)
<70	F	(Fail)

The Operative Dentistry III course has four components:

1. **Clinical component (50%):**
   - **Daily evaluation (50%)**
   - **3 Clinical competencies (Pass/Fail)**
2. **Didactic component (40%):**
   - **Pre Test Exam (15%)**
   - **Final written exam (25%)**
3. **Faculty evaluation and Completion of course evaluation (5%)**
4. **Off-site community outreach program (Project Sealed) (5%)**

Clinical daily feedback and competencies: Electronic feedback on the student performance is provided according to the following three performance levels for each of the six domains or criteria evaluated :

S (SURPASSED)
M (MET EXPECTATIONS)
N (NEEDS IMPROVEMENT OR BELOW EXPECTATIONS)

The students will fill out three self-evaluation questions before the clinical faculty assesses their clinical performance. The main purpose is to integrate critical thinking into their clinical experience evaluation. The student self-evaluation questions are:

- What went well in the appointment?
- What challenges were encountered during the appointment?
- What would you do different to overcome the challenges next time?

Then the faculty will complete the six domain or criteria assessment for the student clinical performance. The main domains are:

1. Comprehensive Diagnosis
2. Patient Presentation/TX Plan and integration of EBD
3. Independence/Self-evaluation
4. Professional/Ethical Behavior
5. Clinical Management
6. Clinical Performance/Skills.

Attached are the detailed description of the 6 domains or criteria and a detailed assessment of each criteria.

Formative Assessment of Daily evaluations:

- The student receives an overall daily grade of **S, M or N** for the entire clinical experience based upon their overall performance in the six domains of the evaluation form
- A complexity point will be added to the overall grade according to the following criteria: *very difficult, difficult, routine, or easy*

Summative Assessment of Competency evaluations:

- Competencies are evaluated using the same assessment criteria described above as daily evaluation, however a S or M= Pass and N=Fail. There are no complexity points given for competencies.
- If a student receives an N (Needs improvement or below expectations) for any of the six assessment domains, the student must retake the competency until the student passes all assessment domains. The student will fail the course if three competency attempts are unsuccessful (N=fail).
- All three competency exams are required to be completed at a passing level to be able to complete the course. The student has 2 weeks after the rotation is completed to pass all 3 competencies.

Outcome	**Assessment/Evaluation Method**
(See attached document)	

B. Summarize student evaluations (most recent 2-3 years) for each course and note changes as a result of feedback.	
Student Feedback	**Outcome**
"Grading needs to be re-evaluated. Self –evaluation of each criteria it's not fair. Some students give "S" for everything and instructors don't change it so the grade it's inflated" Grading system is very confusing for students and adjuncts.	During the past year I met with Jean Florman from the College of Education and discussed with her different ways to introduce concepts of critical thinking within the learning guide and assessment. The following changes were made: 1. Reduce the number or criteria or domains to assess from 15-20 to 6 covering a more comprehensive care assessment. 2. Worked with other clerkship rotations to create a more unify learning guide and assessment tool that can be used across the clerkship rotations and provide a better self-evaluation and assessment criteria to measure our student progress. 3. This year we change the self-evaluation to simply have the students answer 3 questions: • What went well in the appointment? • What challenges were encountered during the appointment? • What would you do different to overcome the challenges next time? It allows the students to critically evaluate their overall clinical experience without giving themselves a grade.
"Different instructors grade things way differently. If there were a way to standardize what exactly faculty are looking for the various components of the evaluation, that would be extremely helpful."	During the year faculty orientation 1-2 weeks before the course starts I did calibration exercises (Vignettes) with the new detailed assessment criteria I also created a detailed description of the 6 domains or criteria and a detailed assessment

	of each criteria. (see attachment)
"the grading is too subjective"	Added Vignettes during faculty calibration with some clinical cases, used turning point for calibration (would like to spend more time in the future during orientation for these exercises)
"little difficult to figure out what works for a complex competency and when speaking with the faculty that there wasn't a good consensus"	Spent more time during orientation providing more details about a complex competency. In the past we had coverage cusp amalgam as complex but not everyone was able to have a patient that needed a coverage cusp amalgam and in many cases the only patient they had was their first experience so it was not possible to measure a "competency" on a first patient experience. I would like to possible remove the "competencies" in the future and replace them with some type of experience where we can measure progression towards competency for certain cases where the students are still learning. The students should be able to show competency on cases that have had repetitive experiences and not with experiences that are their first and only case.
"Getting all the competences done wasn't a problem but I would have liked to have seen more patients but know that's not really something you can control"	We monitor the number of patients and try to distribute fairly during the block. Often have discussions with Oral Diagnosis if we need more patients or some cases for "competencies"
"The EBD portion- we get wayyy too much of this. Make it more realistic like finding a JADA article and critiquing how we may or may not use it in practice"	We started introducing the concept of Team Based Learning and EBD couple of years ago where we present a clinical case and divide the class in 4 groups where they develop a PICO question and critique their lit search in a group presentation. This experience has added a very realistic clinical application. We want to students to have a limited time to search and discuss so it can have a more practical and realistic

	application to what they will face in private practice.
"caries risk should be done in oral diagnosis"	We have done several in service seminars/discussions with oral diagnosis faculty to introduce the concept of caries risk assessment and this year it has been completed the CRA tool in every patient that comes to OD, The students in operative review the information and updated as needed.

C. Describe how this course builds on previous courses and/or how the skills, knowledge & values developed in this course provides foundation for subsequent courses.

The Operative Dentistry III Course builds on the Operative Dentistry I and II courses and the freshman and sophomore Preventive and Cariology Courses. During the freshman and sophomore years the students received a sound theoretical knowledge and understanding of the aetiology, pathogenesis and modifying factors of dental caries and other dental hard tissue disorders. They understand the role of oral biofilms, diet and nutrition, saliva and other host factors, fluoride and behavior//social factors related to caries and other dental hard tissue disorders. During the freshman and sophomore years the student have preclinical experiences and initial clinical experiences with patients to be able to understand and practice the removal of carious tissue before the placement of a restoration, considering the restorability of the tooth, preservation of tooth structure and pulp vitality.
They have novice experience selecting and handling appropriate restorative materials, considering physical and chemical properties, biocompatibility and longevity.
They also have novice experience selecting and carrying out operative techniques that are appropriate for both material and case.
During their junior year the students should have a sound knowledge and understanding on detection, assessment and diagnosis of dental caries disease and its minimally invasive non-surgical (preventive) and surgical treatment and how it relates to the comprehensive care of the patient. The students should start demonstrating (show progression) their independence on clinical decision-making while treating the patient in a comprehensive manner.

D. Describe if this course contains planned redundancies and the redundancies relate to previous courses.
The Operative Dentistry III Course builds on the previous courses mentioned above and has planned redundancies and expansion in areas related to caries disease diagnosis, non-surgical (preventive) and surgical treatments as well as a review of restorative materials, physical and chemical properties, biocompatibility and longevity. The didactic component of the course covers all areas mentioned in previous years although expand the knowledge and complexity given in an interactive manner where the students can relate to their clinical cases with a large component of evidence based dentistry and application of critical thinking for clinical decision making. The clinical component expands on cases that have a higher level of complexity and the students should demonstrate more independence and an understanding of the comprehensive care management for their patients.

E. Describe planned redundancies if present in this course and relation to previous courses.
Please see above.

F. List the CODA standards addressed in this course?	
CODA Standard	**Addressed through:** *(reference course goal/objective)*
CODA 2-9	**1. Critical thinking** Students must demonstrate competence in the use of critical thinking & problem-solving, including their use in the comprehensive care of patients, scientific inquiry & research methodology.
CODA 2-10	**2. Self-assessment & self-directed lifelong learning** Students must demonstrate the ability to self-assess, including the development of professional competencies and the demonstration of professional values and capacities associated with self-directed, lifelong learning.
CODA 2-14	**1. Foundations in Biomedical Sciences** a. Students must demonstrate competence in the application of biomedical science knowledge in the delivery of patient care. b. Students must apply knowledge of pharmacology in the prevention, diagnosis, and management of oral disease and the promotion and maintenance of oral health. (FK8)***Basic Pharmacology for Dental Students (PCOL 8240) **c.** Applied Pharmacology/Dental Therapeutics (DENT 8368)**
CODA 2-15 CODA 2-16	**4. Foundations in Behavioral Sciences –** a. Students must demonstrate competence in the application of the fundamental principles of behavioral sciences as they pertain to patient-centered approaches for promoting, improving and maintaining oral health. b. Students must demonstrate competence in managing a diverse patient population and have the interpersonal and communications skill to function successfully in a multicultural work environment.

CODA 2-17, 5-3, 5-8, 5-9 CODA 2-18	**6. Managing the practice of dentistry** a. Students must demonstrate competence in applying legal and regulatory concepts related to the provision and /or support of oral health care services. b. Students must demonstrate competence in applying the basic principles and philosophies of practice management, models of oral health care delivery and how to function successfully as a leader of the oral health care team.
CODA 2-19	**7. Interprofessional health care** Students must demonstrate competence in communicating and collaborating with other members of the health care team to facilitate the provision of health care.
CODA 2-20	**8. Ethical practice of dentistry** Students must demonstrate competence in the application of the principles of ethical decision making and professional responsibility.
CODA 2-21	**9. Evidence-based dentistry** Students must demonstrate competence in the five steps of EBD (to ask the question, to access, critically appraise, & apply) and communicate scientific and lay literature as it relates to providing evidence-based patient care.
CODA 2-22 CODA 2-23 CODA 2-25	**10. Comprehensive General Dentistry** Students must demonstrate competence in providing oral health care within the scope of general dentistry to patients in all stages of life. At a minimum, students must demonstrate competence in providing oral health care within the scope of general dentistry, as defined by the school, including: **10a: Patient Assessment, diagnosis, comprehensive treatment planning, prognosis & informed consent** **10b**: screening & risk assessment for head & neck cancer **10c**: recognizing the complexity of patient treatment & identifying when referral is indicated **10d**: health promotion & disease prevention, including diet **10e: anesthesia & pain & anxiety control** **10f: restoration of teeth** **10g**: communicating & managing dental laboratory procedures in support of patient care **10h: replacement of teeth including fixed, removable & dental implant prosthodontic therapies** **10i**: periodontal therapy **10j**: pulpal therapy **10k: oral mucosal & osseous disorders** **10l**: hard & soft tissue surgery **10m: dental emergencies** **10n: malocclusion & space management** **10o: evaluation of the outcomes of treatment, recall strategies & prognosis** **10p: screening and risk assessment for caries and periodontal disease** **12. Community-based learning experiences** Students must participate in community-based learning experiences.

CODA 2-23: Intent statement	**13. Emerging Technology in Dentistry** Students should be able to evaluate, assess and apply current and emerging science and technology.

G. Verify the course follows the COD Syllabus e-template ☒

H. Verify the course has been mapped into the collegiate "Course Mapping" tool. ☒

I. List potential course changes and note issues or conflicts that require resolution in order to make a significant change.
- I would like to change the competencies to exercises that show "**progression towards competency**". Many students' complete competencies on experiences that are the first and only experience within a discrete set of clinical circumstances and we cannot expect compency. - Continue to improve our **faculty calibration** (vignette exercises, other…) - Continue with **educational training for faculty** to include more critical thinking tools to guide the students on clinical decision making. - Encourage faculty to continue evolving from "lectures/seminars" to a more **interactive discussion** with and amongst students. (TBL, EBD - Case discussion, flipped classroom, etc) - Increase **self-directed learning** and make students responsible through modifications to examinations and clinical learning and assessment.

Student Self Evaluation Questions:

1. What went well in the appointment?
2. What challenges were encountered during the appointment?
3. What would you do different to overcome the challenges next time?

Operative Domain Description Criteria and Assessment

1. Comprehensive Diagnosis: *Information Gathering & understanding of:*

Chief Complaint/Patient Goals
Medical/Dental/Psychosocial History
Clinical Examination
Radiographic Examination
Diagnostic Aids
Caries Risk Assessment: • Evaluation of Findings and Patient Risk • Patient Behavioral Management • Clinical Management of Oral Environment • Monitoring and Outcomes of Interventions
Consultation/Referral
Evaluation of Findings
Diagnosis/Problems
Modifiers and Goals
Disease Control/Prevention
Rehabilitation Phase
Maintenance/Monitoring
Sequencing of Treatment

2. TX plan Execution, Patient Presentation and Integration of EBD

Selected Treatment Plan with Evidence
Prognosis
Behavior Guidelines
Appointment Plan
Evaluation of Results/Maintenance
Cost Analysis
Treatment Objectives
Treatment Plan(s) • Systematic Phase • Acute/Emergency Phase
Informed Decision (Consent/Refusal)
Asking Answerable Questions
Searching For Best Evidence
Critically Appraising Evidence
Applying Evidence/Making a Decision
Evaluating The Outcome/Your Performance

3. Independence/ Self-evaluation

Identify What Was Done Well
Identify Improvement
Oriented to Outcomes
Concise
Knowledge/Technical/Critical Thinking
Compare with Faculty Assessment

4. Professional and Ethical Behavior

Patient Autonomy (Self-Governance)
Non-maleficence (Do No Harm)
Beneficence (Do Good)
Justice (Fairness)
Veracity (Truthfulness)

5. Clinical Management

Start On Time
Clinic Dress/Personal Hygiene
Infection Control
Organization of Unit
Finish On Time
(Unexpected Events)
Record Management/HIPAA

6. Clinical Performance/ Skills

CLINICAL PROCEDURES
Anesthesia
Isolation
TOOTH PREPARATION
Outline Form/Access
Caries Removal
Internal Form
Finish/Retention Bevel
TOOTH RESTORATION
Cavity Liner
Margin and Surface Finish
Anatomy, Contour and Shade
Occlusion
Proximal Contacts and Embrasures
Adjacent Tooth Tissue and Restoration

Operative Domain Assessment	S = Surpasses Expectations	M = Met Expectations	N = Needs Improvement
1. Comprehensive Diagnosis	*Outstanding and complete diagnostic information gathering related to chief complaint, medical history and implications, clinical and radiographic examination, diagnostic aids; caries risk assessment and significant factors. *Outstanding integration of collected diagnostic data related to risk assessment and prognosis.	*Acceptable diagnostic information gathering related to chief complaint, medical history and implications, clinical and radiographic examination, diagnostic aids; caries risk assessment and significant factors. No critical information missing but some instructor guidance was necessary. *Acceptable integration of collected diagnostic data related to risk assessment and prognosis.	*Information gathering below expectations in at least one critical aspect. *Lack of understanding and integration of collected diagnostic data related to risk assessment and prognosis.
2. Patient Presentation TX Plan Execution, and Integration of EBD	*Outstanding review of comprehensive planned tx sequence; outstanding tx plan presentation and communication. *Completely prepared not only for planned procedures, but for contingencies as well. *Demonstrated outstanding conceptual understanding of planned procedures; all necessary instruments and materials ready. *Demonstrated outstanding conceptual understanding and particularly insightful application of relevant scientific evidence.	* Logical review of comprehensive planned tx sequence; acceptable tx plan presentation and communication. *Demonstrated conceptual understanding of planned procedures; all necessary instruments and materials ready. *Demonstrated conceptual understanding and application of relevant scientific evidence.	* Inadequate or inappropriate understanding of comprehensive planned tx sequence in at least one aspect, OR failure to communicate and/or review treatment plan. *Lacked some conceptual understanding of planned procedures and/or some necessary instruments or materials not ready. *Failed to demonstrate conceptual understanding and application of relevant scientific evidence.
3. Independence/ Self-evaluation	*Outstanding self-evaluation; student performed procedures properly with little or no assistance from faculty. *In communication with faculty demonstrated clear and independent understanding of aspects of care.	*Acceptable self-evaluation; student performed procedures with appropriate assistance from faculty; sought opinion of faculty when appropriate.	*Student unnecessarily dependent on faculty assistance and/or failed to seek opinion of faculty when appropriate; without faculty input and/or correction, a disease state remains or is established or future failure is imminent.
4. Professional and Ethical Behavior	*Student demonstrated particularly outstanding professionalism and ethical behavior. *Student's behavior could be a model for colleagues.	*Student demonstrated appropriate professionalism and ethical behavior.	*Student demonstrated unprofessional or unethical behavior at some point in clinic session; treatment was inconsistent with the patient's welfare.
5. Clinical Management	* Outstanding in all aspects of record management; time utilization, asepsis, pain control, etc.	*Acceptable in all aspects of record management; time utilization, asepsis, pain control, etc.	*Record management; time utilization, asepsis, pain control, etc., below expectations in at least one aspect.
6. Clinical Performance/ Skills	*Outstanding technical skills demonstrated at most steps of procedures; exceeded expectations for this stage of education. *No instructor guidance or intervention was necessary during anesthesia, isolation, tooth preparation, caries removal and tooth restoration. The outcome was the best possible and could not be improved upon.	*Acceptable technical skills demonstrated at each step of procedures; met expectations for this stage of education. * Some instruction guidance or intervention. Acceptable clinical outcome during anesthesia, isolation, tooth preparation, caries removal and/or tooth restoration. Some room for improvement could still be made in efficacy and/or independence.	*Failed to demonstrate acceptable technical skills at some step(s) of procedures; failed to meet expectations for this stage of education. * Instructor guidance, intervention was needed for the patient welfare or repeated coaching was required. Procedure may require alteration due to student error which was avoidable. Independence and/or efficacy clearly deficient and requires definite improvement to be deemed competent.

KEYWORD - AREA Keyword - Specific Topic	D1	D2	D3	D4
BIOMATERIALS **Adhesive luting and cements** **[also see Oper website]**	**OPER:8122** - GIC lecture basics of Gis not luting (Erica) (add 4 slides about Chemical Reaction) - RBC Materials - Mechanical Properties lecture (Maia) (add 2 slides about Mechanical Propeties)	**OPER:8242** - CAD/CAM lecture (30 min) Bonding CAD/CAM restortions - Lab - lute CAD restoration - Veneer luting lecture (30 min) - Lab - lute veneer	**OPER:8370** -GIC (self study .ppt on ICON) - edit content - RBC/Ceramic inlays/onlays lecture (50 min) Types of indirect; Preps; Bonding ceramic **OPER:8370** (1) Veneers lecture - Topic (Luting ceramic restorations) (2) SELF Study Luting .ppt (Steve has a Draft)	
BIOMATERIALS **Adhesive restortation repair**		1. Add restoration repair 30 minutes?	**OPER:8370** - self study PPT on ICON 1. RBC repair, porcelain repair, amalgam repair/masking, air abrasion, silanes, Bisco Intraoral repair kit 2. Restoration repair vs. replacement - possible topic in Dental Materials for Operative seminar (1 hr; Steve)	
BIOMATERIALS **Amalgam Handling Properties and Environmental Safety** **[also see Oper website]**	**OPER:8122** Composition and handling lecture (45 min) - NRK	**OPER:8240** Dental Amalgam lecture (30 min) - NRK	**OPER:8370** 1. Self study powerpoints on ICON (Amalgam) 2. Dental Materials for Operative Seminar (1 hr; Steve)	

KEYWORD - AREA Keyword - Specific Topic	D1	D2	D3	D4
BIOMATERIALS **Photopolymerization/ Light Curing** **[also see Oper website]**	**OPER:8122** - Lecture (1hr; Steve) Photo-initiator chemistry Electromagnetic spectrum Light curing units Terminology: irradiance, spectral irradiance, radiant exposure, … Clinical Concerns: under curing, shrinkage stress, heat, vision safety Light curing variables Factors affecting polymerization MARC PS described - Reading: Concepts pp165-176	**OPER:8240** - Lecture - (30 min; Steve) Identify the clinical problem MARK PS as an effective teaching tool Clinical tips for effective light curing: best practices - You tube Video https://www.youtube.com/watch?v=7Mg_wIXycR0 - Readings: Visible light-curing units " in Summitt's 4th ed. pp261-262. "Polymerization reactions through Biocompatibility" in Craig's 13th ed., pp. 170-181. - Light curing exercise on MARK PS in clinic	**OPER:8370** - Self study topics on ICON "Light Curing I – VI" - Reading: Price, Shortall and Palin 2014 Oper Dent, Contemporary issues in light curing. - Dental Materials for Operative Seminar (1 hr; Steve) – light curing topics possible during student driven seminar - Light curing competency on MARK PS during operative 10 week rotation	"Light curing topics brought up in various FAMD lectures/seminars" Vargas
BIOMATERIALS: **Biocompatibility**	**OPER:8122** - Biocompatibility lecture (45 min; Oper Grad)			

KEYWORD - AREA Keyword - Specific Topic	D1	D2	D3	D4
BIOMATERIALS: **Enamel and Dentin Bonding/Adhesion** **[also see Oper website]**	**OPER:8122** - Intro lecture and video (1hr; Steve) - Reading: Concept Ch. 7 Fall semester - Adhesive evaluation lecture (1 hr; Steve) - Reading: Van Meerbeek 2010 Dent Mater, Spring semester - bond strength lab (2 hrs; Steve) before white coat ceremony	**OPER:8240** - review lecture and video (30 min; Steve) - Reading: Summitt Ch. 9	**OPER:8370** - self study powerpoint on ICON - Possible topic in dental materials seminar (1 hr; Steve)	
BIOMATERIALS: **GI/RMGI** **[also see Oper website]**	**OPER:8122** - Glass Ionomer and RMGI lecture (45 min; Erica)	Add review of clinical indications and tips	**OPER:8370** - Self study powerpoints on ICON (GI/RMGI) - possbile topic inDental Materials for Operative Seminar (1 hr; Steve)	
BIOMATERIALS: **Posts - Endodontically treated teeth** **[also see Oper website]**	PROS??	PROS??	**OPER:8370** - "Foundations for non-vital teeth" Lindquist lecture posted on ICON Develop fiber post best practices document with consult from Carlos Soares PROS??	

KEYWORD - AREA Keyword - Specific Topic	D1	D2	D3	D4
BIOMATERIALS: **RBC Properties** **[also see Oper website]**	**OPER:8122** **-**Resin Based Composite Materials (RBC) Materials –Mechanical Properties 40 min lecture - RM	**OPER:8240** Posterior Composite I & II (Denehy)	**OPER:8370** 1. Self study powerpoints on ICON (RBC) 2. Dental Materials for Operative Seminar (1 hr; Steve) 3. Class I, II, IV (Maia)	
BLEACHING:		**OPER:8240** -Alginate and Bleaching casts lecture (30 min; Kwon) -Clinic: impressions on fellow student and cast pour up **OPER:8242** - Bleaching tray fabrication (3 hrs; Kwon)	**OPER:8370** - Review of whitening procedures and tray fabrication during rotation orientation (??? Min; Guzman-A., Joyce)	

KEYWORD - AREA Keyword - Specific Topic	D1	D2	D3	D4
CARIOLOGY **CRA: Diet**	**PCD:8118 Prev Dent Assessment & Patient Care:** 2 hr lecture & self-assessment of diet Content, focus is normal nutrition **PCD:8117 Cario & Prev Therapies:** lectures 1) science supporting carbohydrates – caries link 2) 'food' relative to caries – science translated to diet? (Teresa) **PCD:8118 Prev Dent Assessment & Patient Care:** 2 hr CRA lecture (Levy) & 2 hr diet assessment lecture (Marshall), then clinically - first caries /Prev risk assessment w/ peer pt, then CRA (includes diet component) with 3 non-peer pts. in May-June (entered into Axium) **DENT:8118** (PBL) diet with each case – may be benign, caries or perio focused. Usually a min. of 1 case with caries-diet issues	**OPER:8240** - patient dietary assessment & one self assessment, Focus is on caries risk **PCD:8245 Prev Dent** caries & perio risk assessment w/ 6 patients (includes diet component)(entered into Axium & ADA code is used & record audits reinforce use of ADA codes for caries risk) **OPER:8240/8241** completed on every patient at every appointment in the clinic. Using COD CRA and ADA caries risk codes	**Perio or Experiential learning** ? Self/peer assessment - focus is nutritional, but students are expected to identify caries risk. - case presentations (re: critical thinking) Might or might not include diet – based on patient's issues **OPER:8370** Orientation Seminar review on Caries Management by Risk Assessment, Diagnosis and Treatment. **OPER:8370** CRA completed or reviewed in every patient at every appointment. Usinf COD CRA and ADA codes	(Addressed at Initial Exams, Maintenance Visits, Periodontal Re-Evaluations & Exit Exams) **FAMD:8495 Tx Planning & Sequencing Course** (Addressed in PBL Seminars, Case Presentations & Lecture content)

KEYWORD - AREA Keyword - Specific Topic	D1	D2	D3	D4
CARIOLOGY: **Biological and pulpal considerations**	**OPER:8122** - liners and bases Lecture (???min; Teixeira) - Reading: Concepts pp157-166	**OPER:8240** - diagnostic tests Lecture (30 min; Meredith) - Pulpal Protection I lecture: pulpal inflammation, pulpal pain, sealer and liners, (30 min.; who????) - Pulpal Protection II lecture: Stepwise caries removal, indications, rationale, materials, technique (30 min. who???)	**OPER:8370** - Pulp response to operative procedures and materials seminar (50 min; Walton) How to proceed after Walton talk with Endo about vital pulp therapy curriculum+D21	**???**
CARIOLOGY: **Caries Diagnosis and ICDAS** **a) ICDAS** **b) early detection devices** Need to incorporate ICDAS codes and actvity into Axium Radiology caries classifications should be incorporated in COD	**PCD:8117 Cariology Course** - Dr. Levy lectures on clinical diagnosis of caries which includs detection devices. Dr. Kolker lectures on ICDAS and then facilitates a hands-on exercise identifying ICDAS codes on extracted teeth Caries Epidemiology, Etiology, Process and Histology, Clinical Diagnosis, Radiology, Caries Activity, Caries Vaccine.	**OPER:8240&8241** **-** Use of ICDAS learning package and detection and classification on mock patient (photos) **(same as the following ??????)**. - ICDAS review exercises Software Online training (4 hrs) - Clinic: Discussion of concepts during clinical exams for patient and treatment decisions	**OPER:8370** - review diagnostic devices (1 hr; Kolker) - Clinic:Assessed at every appt with every patient	Need to continue the use of codes during the clinical discussions

KEYWORD - AREA Keyword - Specific Topic	D1	D2	D3	D4
CARIOLOGY: **Cavitated lesions:** **basic caries removal** **[also see Oper website]**	**OPER:8122** **-** Lecture (??? Min; Teixeira) - Lab - removal of caries on dixie cup mounted natural teeth mounted (3 hrs) - Lab - removal of simulated caries in Kilgore plastic teeth 3 teeth ????? (9 hrs?????) Definitions with cartoon and visual aids for caries removal and approaches which guides all caries management in dept and COD	**OPER:8240&8241** - management of cavitated lesions lecture (30 min; Meredity) - Reading: - Clinic:caries removal competency - Clinic: Discussion of concepts and procedure completed for every patient that has cavitated caries lesions, also part of competency. Usually small /medium lesions	**OPER:8370** - reviewed in deep caries lesion lecture (50 min; Hernandez) - Clinic: Discussion of concepts and procedure completed for every patient that has cavitated caries lesions, also part of competency	Need to continue defect specific minimally+E20 invasive philosophy.
CARIOLOGY: **CRA: Behavioral Changes** **weak area - future????**	**???**	**???** **OPER:8241** - Clinic: motivation and evaluation of behavioral changes when doing CRA for every patient at every appt	**8360 Pediatric Dentistry Course:** Dr. Weber-G (1hr) seminar on behavioral management **OPER:8370** -Clinic: motivation and evalaution of behavioral changes when doing CRA for every patient at every appt	**FAMD:8487&8488 FAMD Clinic** (Addressed at Initial Exams with recommendations reinforced at each patient visit, also addressed at Maintenance Visits, Periodontal Re-Evaluations & Exit Exams) **FAMD:8495 Tx Planning & Sequencing Course** (Addressed in PBL Seminars, Case Presentations & Lecture content)

KEYWORD - AREA Keyword - Specific Topic	D1	D2	D3	D4
CARIOLOGY: **CRA: Fluoride Exposure**	**8117 Cariology Course** -- Levy/Kolker (7 hrs) on Fluoride Therapies	**OPER:8240&8241** - Clinic: Addressed at every patient - CRA lecture (30 min; Guzman-A.) **8245 Preventive Dentistry** Course: Karen Baker lectures on dentifrices and mouth rinses	**8355 Introduction to Geriatrc Dentistry**: In geriatrics/special needs course **OPER:8370** Addressed at every patient appointment didactics during CRA lecture	**FAMD:8487&8488 FAMD Clinic** (Addressed at Initial Exams, Maintenance Visits, Periodontal Re-Evaluations & Exit Exams)
CARIOLOGY: **CRA: Plaque control**	**PCD:8117 Cariology and Preventive Therapy** (2hrs) seminar (Banas) Oral Flora, plaque, oral microflora and caries **PCD:8116 - Fundamentals of Clinical Dentistry -** First Peer patient session: assess plaque, full mouth plaque score (on 3 point scale), calculate Plaque index. Record in Axium Provide plaque control individualized instruction/ OHI. Karen Baker provides 2 hr lecture on dentifrice categories. **PCD:811**8 - Preventive Dentistry Assessment & Patient Care - Plaque control instruction/OHI is incorporated in caries risk assessment/ preventive dentistry risk assessment (includes perio risk assessment & nutrition components) first with peer patients, then with 2 non-peer patients). Caries risk assessment codes are used with every Prev patient in D1 Preventive clinic and caries risk assessment is initiated &/or updated with every Prev patient in D1 Preventive Clinic.	**8245 Preventive Dentistry Course: clinic** for every patient - Karen Baker lectures on dentifrices and mouth rinses **OPER:8241** -Clinic: Addressed at every patient appointment **PERI:8230 Periodontal Methods II** Addressed in lectures on nonsurgical therapy by Dr. Johnson; and in periodontal/implant maintenance by Ms. Slach	**8355 Introduction to Geriatrc Dentistry**: Dr Howard Cowen lecture and case presentations **OPER:8370** Addressed at every patient appointment **PERI:8360 Periodontics Clinic** Addressed at every patient appointment **PERI:8365 Periodontics Seminar** Oral hygiene instructions with special considerations for the periodontal patient are reviewed by Ms. Slach in a lecture on plaque control and periodontal maintenance	**FAMD:8487&8488 FAMD Clinic** (Addressed at every patient appointment)

KEYWORD - AREA Keyword - Specific Topic	D1	D2	D3	D4
CARIOLOGY: **CRA: Xerostomia**	**PCD:8117** Cariology Course (1 hr; Banas) Saliva Flow test **+B21** - **Prev Dent Asses & Pt Care** - lecture "Preventive dentistry risk assessment" (xerostomia assessment included) (2 hr; Levy) - lecture on mouthrinse categories (2hr; Baker) - Caries risk assessment/ preventive dentistry risk assessment is completed, first with peer patients, then with 2 non-peer patients. Caries risk assessment codes (ADA procedure codes) are used with every Prev patient in D1 Preventive clinic. Caries risk assessment form is initiated &/or updated in Axium with every Prev patient in D1 Preventive Clinic.	**PCD:8245** Covered in D-2 Prev clinic, as needed (fairly high number of xerostomic patients). Discussed briefly in Cunningham lecture **OPER:8240:** Review xerostomia signs and symptoms at CRA for every patient at every appt Clinic: Students perform salivary testing on each other??? cost of kits covered by ???	**DENT:8355 Introduction to Geriatrc Dentistry:** intro and case discussion **OPER:8370:** Xerostomia Overview (1hr) Dr. Marek and management for any patient that has xerostomia in the Oper III Clinic, this is review during CRA for every patient at every appointment Clinic: restart salivary testing for patients??? Oral Path: Hellstein ????? Perio:??? Pros:???	**FAMD:8494 Topics in Family Dentistry** (Didactic content in lecture format) **FAMD:8487 & 8488 Family Dentistry Clinic Courses:** (Addressed at Initial Exams, Maintenance Visits, Periodontal Re-Evaluations & Exit Exams) **PCD:8494 Geriatrics and Special Needs Program:** case discussions

KEYWORD - AREA Keyword - Specific Topic	D1	D2	D3	D4
CARIOLOGY: **Deep carious lesions** **a) direct pulp capping** **b) indirect pulp capping** **c) step-wise caries removal (re-entry)** **d)stepwise caries removal (non-re-entry)** **e) ultra-conservative caries removal** **[also see Oper website]**	**OPER:8122** Lecture (Teixeira) Reading: Concepts pp157-166 **OPER:8122** Lab - Direct pulp cap on natural tooth then restore with GI	**OPER:8240** 30 min lecture that gives them a short introduction on deep caries lesion and stepwise excavation. **OPER:8240** Need to better introduce treatment concepts for deep caries lesions	**OPER:8370** Dr. Hernandez 1 hr Review of tretament of deep caries lesions. (direct pulp capp, Partially caries removal) **OPER:8370** need to spend more time in seminar discussing clincal cases involving treatment of deep caries lesions	There is lack of consistency in treatment philosophy of deep caries removal in clinic+E22
CARIOLOGY: **Diagnosis and Non surgical management** **non-cavitated caries lesions** **[also see Oper website]**	**PCD:8117 Cariology course**: Dr. levy: and Dr. Kolker management within lecture of non cavitated carious and non carious lesions d+B8iagnosis **OPER:8122** dx of non-cavitated lesions (who, how much?????) **PCD:8118** Preventive clinic: clinical diagnosis of non-cavitated carious lesions and non carious lesions (odontogram exercise)	**OPER:8240** Dr. Restrepo-K lecture review non cavitated caries lesions. Patient exposure twice a week. **OPER:8241** Discussed concepts during clinical exams for patient and treatment decision Add treatment planning	**OPER:8370 (**Dr. Kolker 1hr lecture moved to D2) and Clinical experience in the Oper/Pedo Dr. Guzman reviews at rotation orientation Assessed at every appt with every patient when they have non cavitated lesions	**FAMD:8487&8488 FAMD Clinic**: Addressed at Initial Exams with recommendations reinforced at each patient visit, also addressed at Maintenance Visits & Exit Exams

KEYWORD - AREA Keyword - Specific Topic	D1	D2	D3	D4
CARIOLOGY: **General Concepts CRA** **[also see Oper website]**	**PCD:8117 Cariology Course:** Lectures given by Preventive Faculty - risk factors, risk level, and interventions. Dr. Levy Course Cariology **Prev:** intro to CRA (Warren)	**OPER:8241** Completed or reviewed for every patient in the D-2 Prev Clinic - 30 min Review lecture Prev: review CRA on each other , etc Cunningham	**OPER:8370 (Guzman)** • Review CRA risk factors and evidence • Review chemotherapeutic interventions (evidence) and clinical application • Discussion of clinical cases • Implementation of critical thinking framework to apply CRA in the clinic (Video) • Clinic - CRA a+D22ssessed at every appt with every patient +D22	**FAMD:8487&8488 FAMD Clinic** (Addressed at Initial Exams with recommendations reinforced at each patient visit, also addressed at Maintenance Visits & Exit Exams) **FAMD:8495 Tx Planning & Sequencing Course** (Addressed in PBL Seminars, Case Presentations & Lecture content)
CARIOLOGY: **Non-carious hard tissue lesions:** **a) erosion** **b) attrition** **c) abfraction** **d) fluorosis** **e)hypoplasia/hypomineral.** **f) abrasion+A24**	**OPER:8122** **-** lecture (???min; Guzman) - Reading: Concepts Ch 2 Carious and non-carious lesions	**OPER:8240&8241** - review clinical observations of hypoplasia and fluorosis in "non-cavitated lesions lecture" (30 min; Restrepo) - Added FY15 abfraction, abrasion, attrition, erosion lecture (30 min; Meredith) - Clinic: Some students get clinical experience evaluating these type of lesions.	**OPER:8370** **-** fluorosis and hypomineralization lecture (???min; Kolker) - Self study powerpoint on ICON: few slides on erosion, abfraction, abrasion, attrition - Clinic: Most students get clinical experience evaluating these type of lesions.	**FAMD:** Most students get clinical experience evaluating these type of lesions.

KEYWORD - AREA Keyword - Specific Topic	D1	D2	D3	D4
CARIOLOGY: **sealants and resin infiltration** **[also see Oper website]**	**OPER:8122** Lecture (Guzman) Sealants/PRRs **PCD:8117 Cariology And Prev Dentistry Course:** Lecture Sealants (Levy) 2 hrs **PCD:8118 Prev Dent Assessment and Patient Care Course:** **Sim clinc** sealant placement (Prev, Pedo) timing was changed to coordinate with D1 operative, that is, sealant lecture and exercise before for preventive resin restoration (comp-seal) lecture and exercise placement. [Accomplished 2014-2015] 2015-2016 - B28Bonding lecture needs moved before sealant lab exercise they don't understand bonding to enamel for sealants, etc.	**OPER:8240&8241** Lecture: non-cavitated pit and fissure lesions (Natalia) **OPER:8240** frequent placement in the clinic for preventive and therapeutic sealants	**OPER:8370** Lecture (Guzman) resin infiltration mentioned for interprox. lesions **OPER:8370 Team-based Learning** (Guzman) resin infiltration used in one case for one block **OPER:8370** Lecture (Guzman) CRA and management sealants and tech. discussed **90:165** Lecture (Skotowsk&D3) little bit on discussing need for sealants with parents Lecture (Mabry) a little on sealants in primary teeth **OPER:8370** placement often in the clinic for preventive and therapeutic sealants	Not sure if FAMD using Therapeutic sealants or on board with terminology/concept

KEYWORD - AREA Keyword - Specific Topic	D1	D2	D3	D4
CLINICAL experiences 2005 ADA Survey of Dental Services Rendered (selected procedures): Posterior direct restorations: 41% dental amalgam (52,192,170) 59% dental composite/GI (76,499,240) Posterior indirect restorations: crowns = 33,931,230 inlays/onlays=1,362,330 Diagnostic, preventive, restorative plus pulp capping, desensitization, occlusal gaurds, enamel abrasion and bleaching account for 86% of all services rendered.	**PCD8118 Prev Clinic**	**OPER:8241** 16 - 18 half days, including 2 which are clinical practice on classmate Estimates: - Amalgams < 1 per student - RBCs 3 per student - GIs 2 per student - Sealants 10 per student	**OPER:8370** Averages per student from FY12 - FY14 - Visits: 38.3 - Amalgams: 6.6 - Glass Ionomers: 8.4 - Composites: 21.7 (not including preventive and therapeutic sealants) - Core buildups: 0.4 - CAD/CAM Onlays and gold Onlays: 0.12 with the majority being gold onlays - Bleaching ~ 1 Every pt experience students complete a self evaluation and assessment of their work; evaluated on their critical thinking and judgement Implement "Grand Rounds" before some clinic sessions?	Advanced operative return to Operative Clinic egs. Esthetic bonding, cuspal coverage amalgam, etc.
DENTAL ANATOMY Deciduous Dentition	**OPER:8120** - Self study/Quiz Unit 10	PEDO ????		
DENTAL ANATOMY Pulp Morphology of primary and permanent teeth	**OPER:8120** - Self study/Quiz Unit 9	PEDO ???? ENDO ????		

KEYWORD - AREA Keyword - Specific Topic	D1	D2	D3	D4
DENTAL ANATOMY **Introduction & Terminology**	**OPER:8120** - Intro lecture (1hr)(SRK) - Instruments/check in (2hr) - Terminology lecture (45min) (Maia) - Self study/Quiz Unit 1			
DENTAL ANATOMY **Morphology of Permenant Teeth; Tooth identification; waxing technique**	**OPER:8120** - Self study/Quizzes Units 3-8 - Tooth ID Self study .ppt - Tooth ID Turning point exercises: ant, premolar and molar -Tooth ID exams ant; premolar; molar+B30 -Wax addition tech (1 hr) (SRK) -Waxing tech lectures for #4, 9, 14, 19 (1 hr each) (SRK) -Waxing turning point exercises for teeth 4, 9, 14 -Waxing practice: geometric figures, 7MI, full contour and self-eval 9, 4, 14 -Waxing competency and self eval 9, 4, 14 -Waxing final project #19 P/F -Dental Anatomy summary turning point exercise **PROS8120/8121** waxing to occlusion started by PROs FY15	**OPER:8242** Potential inclusion of diagnostic wax-up procedure in sophomore esthetic course for peg lateral ?????+C55	**OPER:8370** Selective diagnostic wax-up on clinical cases based on instructor	**FAMD:8487 & 8488** Selective diagnostic wax-up on clinical cases based on instructor

KEYWORD - AREA Keyword - Specific Topic	D1	D2	D3	D4
DENTAL ANATOMY **Physiologic Considerations of Form & Function**	**OPER:8120** - Self study/Quiz Unit 2			
DENTAL ANATOMY **Tooth Development; eruption sequence; & Anomalies**	**OPER:8120** - Self study/Quiz Unit 11	PEDO ????	PEDO ????	
DIGITAL DENTISTRY **CAD/CAM Scanning, Designing & Milling**	**OPER:8120** **-**Digital scanning and evaluation software training CEREC & E4D (two separate 3 hour sessions) (SRK) -Completion of digital and visual self-evaluation sheet of #9, 4, 14-with individual instructors **PROS:8122&8123 Ant. Fixed Pros** scanning activities	**OPER:8242** -E4D and CEREC company trainers lead software training (4 hours) **OPER:8240** -sim clinic self-guided scanning, designing and milling and luting of onlay **PROS** scanning activities?	**OPER:8370** some students do chairside CAD/CAM primarily CEREC **PROS** add activities here	**FAMD:8487&8488 FAMD Clinic** some students do chairside CAD/CAM both CEREC and E4D
DIRECT RESTORATIONS **GI: closed sandwich/liner**	**OPER:8122** Composite/Glass Ionomer Sandwich Technique 30 min lecture - NRK (Grad) Sim Clinic exercise	Add review of clinical indications		
DIRECT RESTORATIONS **GI: pulpal protection**	**OPER:8122** Pulp Protection and Therapy lecture (45 min;ET) - Sim Clinic exercise (2.5 hrs)	Add review for enter to clinic		

KEYWORD - AREA Keyword - Specific Topic	D1	D2	D3	D4
DIRECT RESTORATIONS **Composite Class I**	**OPER:8122** **-** lecture (45 min; ET) - Sim Clinic exercise (3 hrs)		**OPER:8370** Direct RBC posterior 30 min lecture - Incremental Technique - Class I - RM	
DIRECT RESTORATIONS **Composite Class II**	**OPER:8122** **-** lecture (30 min; ET) - Sim Clinic exercise (16 hrs)		**OPER:8370** Direct RBC posterior 30 min lecture - Incremental Technique - Class II - RM	
DIRECT RESTORATIONS **Composite Class III**	**OPER:8122** **-** lecture (40 min; ET) - Sim Clinic exercise (14 hrs)			
DIRECT RESTORATIONS **Composite Class IV**	**OPER:8122** -Polychromatic Technique lecture (1 hr; GD) -Sim Clinic exercise (1.5 hrs)	**OPER:8242** - lecture (30 min; Denehy) - Demo (30 min; Denehy) - sim clinic exercise (3 hrs; Denehy)	**OPER:8370** Direct RBC anterior 50 min lecture & mock-up & lingual matrix & Halo (RM)	
DIRECT RESTORATIONS **Composite Class V**	**OPER:8122** **-** lecture (45 min; NRK) - Sim Clinic exercise (6 hrs)			
DIRECT RESTORATIONS **Composite Diastema**		**OPER:8242** - lecture (30 min; Denehy) - Demo (30 min; Denehy) - sim clinic exercise (3.5 hrs; Denehy)		
DIRECT RESTORATIONS **Composite Peg Laterals**		**OPER:8242** - lecture (30 min; Maia) - Demo (30 min; Maia) - sim clinic exercise (3.5 hrs; Maia)		

KEYWORD - AREA Keyword - Specific Topic	D1	D2	D3	D4
DIRECT RESTORATIONS **Composite Veneers**		**OPER:8242** - lecture (30 min; Guzman-A) - Demo (30 min; Guzman-A) - sim clinic exercise (3.5 hrs; Guzman-A)		
DIRECT RESTORATIONS **Amalgam Class I**	**OPER:8122** **-** lecture (45 min; NRK) - Sim Clinic large Class I exercise (6 hrs)			
DIRECT RESTORATIONS **Amalgam Class II**	**OPER:8122** **-** Class II Amalgam Cavity Preparation, Matrices and Restorative Techniques lecture (45 min; NRK) - Sim Clinic exercise (16 hrs)			
DIRECT RESTORATIONS **Composite** **Re-alignment**				
DIRECT RESTORATIONS **Cuspal Coverage** not adapting well to individual cases during D3 clinic in both gaining adequate resistance and retention and amal placement	**OPER:8122** **-**Complex Amalgam Cavity Preparation and Restoration Techniques lecture (45 min; NRK) - Sim Clinic exercise (4 hrs)	**OPER:8240** **-** Cuspal Coverage Amalgam lecture - (30 min; NRK) - Sim Clinic: cuspal coverage practice (4 hrs)	**OPER:8370** - Complex Amalgam: and Foundations 45 min lecture - (45 min; NRK) Add additional extracted tooth experience ? More visual aids needed ?	Advanced operative return to Operative Clinic for "Oper IV", "Elective Operative" egs. Esthetic bonding, **cuspal coverage amalgam**, etc

KEYWORD - AREA Keyword - Specific Topic	D1	D2	D3	D4
DIRECT RESTORATIONS **GI: open sandwich**	**OPER:8122** **-** Composite/Glass Ionomer Sandwich Technique lecture (30 min; - NRK or Grad) - Sim Clinic exercise (2.5 hrs)	Add review of clinical indications and tips		
DIRECT RESTORATIONS **GI: provisionals**	**OPER:8122** **-** Glass Ionomer and RMGI lecture (45 min; ET)			
DIRECT RESTORATIONS **GIC and RMGI**	**OPER:8122** -Glass Ionomer and RMGI lecture (45 min; ET) - Sim Clinic exercise (1.5 hrs)	Add review of clinical indications and tips	**OPER:8370** 1. Self study powerpoints on ICON (GI/RMGI) 2. Dental Materials for Operative Seminar (1 hr; Steve)	
SMILE ANALYSIS			**OPER:8370** **-** lecture esthetic considerations and digital smile design (50 min; Maia)	FAMD???
FIELD CONTROL	**OPER:8122** **-**Rubber Dam isolation lecture (45 min; NRK) - 3 hr Sim Clinic exercise (NRK) - use RD for vast majority of sim clinic exercises	**OPER:8240** - lecture (2.5 hr; PM) RD, tissue management, expandex/Optragate, cotton/cord - hands-on student to student clinic exercise (3hrs each student)	**OPER:8370** - diode laser for soft tissue lecture (50min; Swett) **OPER:8370** develop advanced field control techniques self study .ppt	

KEYWORD - AREA Keyword - Specific Topic	D1	D2	D3	D4
INDIRECT RESTORATIONS **Cementation**		**OPER:8240** CAD/CAM lecture - cementing and finishing (30 min; Meredith????)	**OPER:8370** **-** RBC/Ceramic inlays/onlays lecture (50 min; Maia) Types of indirect; Preps; Bonding ceramic - self study .ppt and possible discussion item during D3 seminar material surface prep treatment and luting	FAMD CLINIC case by case
INDIRECT RESTORATIONS **Inlay/Onlay principles of preparation**		**OPER:8242** CAD/CAM Restorations lecture (30 min; Meredith**)** covers aspects of preparation	**OPER:8370** **-**Gold inlays/onlays lecture (50 min) (Meredith) - RBC/Ceramic inlays/onlays lecture (50 min) (Maia) Types of indirects; Preps; luting **-** Gold onlay prep and temp 3 hour hands-on to start block	FAMD CLINIC case by case
INDIRECT RESTORATIONS **Veneers**		**OPER:8242** - lecture (30 min; Guzman-A) - Demo (30 min; Guzman-A) - sim clinic exercise (3.5 hrs; Guzman-A)	**OPER:8370** Veneers lecture (50 min) - (Maia) Types of ceramics; Preps; Cementation	FAMD CLINIC case by case

KEYWORD - AREA Keyword - Specific Topic	D1	D2	D3	D4
MAGNIFICATION **Surgical loupes** need EBD review to discuss declaring loupes mandatory for students	**OPER:8120** magnification lecture (30 min) (NRK)			

Spring 2015 – Operative Dept Peer Review – Executive Summary

(from Curriculum committee work group - chaired by Marsha Cunningham)(Submitted 5-19-15)

Work group committee members: D.C. Holmes, Jim Clancy, Howard Cowen, Marcos Vargas, Mary Lynn Eckert

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The 24 page report (with 20 page appendix) was received from Dr Steve Armstrong on Feb 21, 2015 & distributed to the work group.

The work group met on Feb 23, March 13 & May 18, 2015 to discuss the Operative Dentistry review documents.

On March 23, the work group sent the following list of questions/clarifications and missing items to Dr Armstrong. The replies to those questions were received on May 4, 2015 and are shown below.

- Appendix includes an extensive list of key words displaying both vertical & horizontal integration in each of the Operative courses. Red font shows "ideas/planning"/additions and blue font displays "unnecessary redundancy/remove". The work group notes that there is only one item in the 20 page appendix in blue font for removal, but there are 36 items in red font. The work group commends the Departmental faculty for identifying 36 areas for improvements, but for each item that is added, something has to be removed/revised to make room for the addition so that the curriculum is not expanded. Please show in this appendix, where redundant or outdated content can be removed to make space for the 36 additions.

REPLY: Please appreciate that the Operative curriculum topic list is an internal document to record our discussions as we try, on an ongoing basis, to evaluate and improve our curriculum. We included this as an appendix to share with the curriculum committee to show how we are working and offer it as a possible way forward for interdepartmental curriculum communications. This appendix is not an action plan communication to the curriculum committee. We will use this in an ongoing basis to identify where change should be considered within our department. Most of the identified items are minor or internal to a course and placed in the document to allow the faculty responsible for the lecturer to plan, the course director to organize the course and all members of the department to know what is happening, , eg. "add 4 slides about glass ionomer cements chemical reaction"; "add review of clinical indications for liners and pulpal protection". Some other items are more involved or potentially cross departments, eg. "Student performs salivary testing on each other????"; "implement 'grand rounds' before some clinic sessions". This is our first comprehensive attempt to identify the topics we teach and when and how they are taught. We began working on this in various formats since shortly after I became head of the department. Please keep in mind this is a discussion tool in which issues are identified for further consideration and not in every case will an entry listed in red lead to any immediate action. Some items record changes made during 2014-2015, some are simple lecture modifications that need to be completed, some are simply cataloging an idea for curriculum improvement that requires further internal or external discussions. A primary goal of our departmental curriculum is to increase active learning during the clerkships when we have the students in smaller groups. To do this we need to: (1) move, where appropriate, D3 lecture materials to the D1 and D2 years (2) maximize lecture time in the D1 and D2 years and (3) increase the level of student responsibility for self-study materials for effective clerkship seminars.

- Appendix is an excellent "working document" for Departmental planning, but please clarify the following items for the work group/Curriculum committee:
    - Appendix page 7 – "CRA – Behavioral changes" are listed as a "weak area – future ???", however, ??? indicate that information is missing from D1 & D2 columns. Curriculum committee is aware of

behavioral content in Experiential learning courses (taught by Ms O'Toole)(e.g., communication /behavioral science content and multiple standardized patient exercises) in both the D1 and D2 years. Please ask Ms O'Toole to clarify /add to your planning document on page 7 & re-submit it to the work group (without the question marks/missing information).

Reply: This is an excellent example of where further information would be helpful from other departments. We recognize that there are multiple areas of crossover and it is the assignment of our topic expert teams to identify that departmental crossover, update the topics list and bring that topic to the group for ongoing discussions. Relative to this specific topic of behavioral changes, the 'weak area' for discussion is the instructor-student chairside interactions to effect behavioral changes in the patient. This interaction is not reinforcing well enough what has been taught earlier by Cindy, if even addressed at the appointment – we are missing opportunities to improve our teaching.

- Appendix page 13 (and report page 5, Section XI) – 2005 "ADA Survey of Dental Services Rendered" is cited and the work group thinks that current data sources, such as Delta Dental - Iowa data within the last 2 yrs would make a more useful comparison. For example, the 10 yr old ADA data indicate that 41% of posterior direct restorations are amalgam, but that has probably changed in the last 10 yrs ? It appears in the D2 column (page 13 of appendix) that our D2 students do less than 1 amalgam per student. Please clarify if the data in D2 column are "average" or 2013-14 ? or 2005 ? (although new course # is at top of that column).

Reply: Data is "Averages per student from FY12-FY14". We don't expect the D2 clinic to do lots of amalgam because early lesions ("minor") are referred to the clinic. Dental composite is the material of first choice for early to moderate pit and fissure and smooth surface lesions. The survey data is sufficient, little-changed to date, and does not change what the patient presents for treatment.

- In that same D2 column (page 13 of appendix), it appears that each student only complete 5-6 operative clinical experiences in 16 half days (excluding 10 sealants per student). Is that due to lack of patients ? or patient failures? Curriculum committee is aware that services were reduced to no charge several years ago to help bring patients into that D2 clinic. Is that still not enough to bring in adequate patients for the D2s ? What are the future plans to improve that ?
  Maybe add fewer lectures in D2 year & explain your plan to add more patient experiences in those 16 half days ?

Reply: Dr. Meredith has worked very closely with Dr. Nidhi Handoo to bring awareness to the patient experience needs in the D2 clinic and will continue to attend each oral diagnosis clerkship orientation to assist in this message. Other than the initial all day clinic orientation lectures, the lectures do not reduce patient experiences. The lectures are from 8:00 to 8:30AM on Tuesday mornings only.

- In that same D2 column (page 13 of appendix), please ask Pedo & Endo to clarify the vertical integration of dental anatomy content in D2 year (i.e., eliminate question marks & fill in information).
- Appendix page 15 – more dental anatomy question marks in D2 & D3 columns that need to be filled in with information from Pedo.

Reply: This work is ongoing and will be obtained in due time. There are many other topics and courses besides dental anatomy that require discussions with other departments to have a more complete and accurate accounting of these topics in our curriculum – again, the operative curriculum topic list is a work in progress.

Report page 4 – Section VIII – "Does the curriculum mapping system appropriately reflect what you teach in the discipline specific predoctoral curriculum?". The report says the Dept has confirmed that all courses have been mapped in the Collegiate course mapping. The work group notes that in the individual D1 courses, there are check marks in the boxes for mapping (page 10 G & H & page 14 G & H), but in the D2 & D3 courses there are x marks (page 16 G &H, and page 24 G & H) for mapping. We just wanted to confirm that check and x mean the same thing for all of your courses for compliance with the curriculum mapping ?

Reply: yes

Report page 4 – Section VIII - The report notes that the "Characteristics of a CoD graduate" are not detailed enough.." However, the CODA standards/(which are directly aligned with our Collegiate Competencies)(required by CODA), are very detailed and very specific. The Operative Dentistry keywords (Appendix) would be an excellent addition to our Curriculum mapping and in fact Lily Garcia and Mike Mulder have the addition of keywords as a long term goal for our mapping module. Until keywords are incorporated into our mapping module, please list any gaps on page 4, Section VIII in how the Operative courses meet the CODA standards/our Collegiate Competencies (from our CoD Curriculum mapping module).

Reply: No gaps.

Report page 5 – Section XI – "Is the scope of the discipline-specific treatment procedures taught appropriate for a new graduate, general dentist?" 2005 ADA data are cited, but our concern is the same as expressed earlier (Appendix page 13), current data are needed (perhaps Delta Dental data in past 2 yrs?)

At the end of that page, it is noted that "Our initial introduction to these surgical skills may be reinforcing the traditional cut first and cut large approach of the past." The work group suggests adding a statement at the end of page 5, such as:

"However, D1s do take didactic courses "parallel" to D1 Oper course in "Cariology & Preventive Therapies" (PCD:8117) and didactic/clinical courses in "Preventive Dentistry Assessment & Patient Care" (PCD:8118).

This statement would acknowledge how the Operative content is integrated with and followed by other courses within the College of Dentistry with a preventive emphasis.

Reply: Comments under Section XI are a reflective critique of Operative Dentistry only – Operative needs to do more relative to caries lesions management prior to cavitation in the Oper I, II and III courses.

Report page 6 – Section XII - In the last paragraph on that page, it is stated that: "Greater student readiness and efficiency in obtaining radiographs for the operative clinic would permit more operative procedures to be completed by students…" . The work group is wondering, don't most patients come to Operative from OD with radiographs ? The Curriculum committee added a D2 clinical Radiology rotation (of 6 sessions) several years ago. If more time can not be added to D2 Radiology & D2 Radiology experience is not sufficient for D3s to "obtain radiographs efficiently…", what options are available without adding more time to the D2 curriculum ?

Your opinion would be appreciated here, and this item will need to be addressed by the Curriculum committee as a whole since it involves multiple Departments. The D3 Clerkship Directors committee is also working on potential solutions to this issue.

Reply: Nothing further to add; please refer to the working group assigned to this issue.

Report Page 16 (item F)(CODA standards) – D2 course references "Course manual, page 10", but the manual is not attached to this report. Please cut & paste the CODA standards/Collegiate competencies & how they are addressed in this D2 course into this document on page 16. (similar to the way the D1 courses (page 10 & 13) inserted the CODA standards for their courses)

Reply: The manual is on ICON and the CODA standards/Collegiate competencies are inserted below

4. COLLEGIATE COMPETENCIES ADDRESSED IN THIS COURSE (D3 course)

	Evaluation Methods
1. Critical thinking Students must demonstrate competence in the use of critical thinking & problem-solving, including their use in the comprehensive care of patients, scientific inquiry & research methodology. (*CODA 2-9)	VQ, CCE, DCE
2. Self-assessment & self-directed lifelong learning Students must demonstrate the ability to self-assess, including the development of professional competencies and the demonstration of professional values and capacities associated with self-directed, lifelong learning. (CODA 2-10)	VQ,CCE,DCE
3. Foundations in Biomedical Sciences a. Students must demonstrate competence in the application of biomedical science knowledge in the delivery of patient care. (CODA 2-14)	VQ,CCE,DCE
4. Foundations in Behavioral Sciences – a. Students must demonstrate competence in the application of the fundamental principles of behavioral sciences as they pertain to patient-centered approaches for promoting, improving and maintaining oral health. (CODA 2-15) b. Students must demonstrate competence in managing a diverse patient population & have the interpersonal & communications skill to function successfully in a multicultural work environment. (CODA 2-16)	VQ,CCE,DCE,MCSA
5. Managing the practice of dentistry Students must demonstrate competence in applying legal and regulatory concepts related to the : a. provision and /or support of oral health care services. (CODA 2-17, 5-3, 5-8, 5-9) b. Students must demonstrate competence in applying the basic principles and philosophies of practice management, models of oral health care delivery and how to function successfully as a leader of the oral health care team. (CODA 2-18)	VQ, MCSA
7. Interprofessional health care Students must demonstrate competence in communicating and collaborating with other members of the health care team to facilitate the provision of health care. (CODA 2-19)	VQ,DCE

8. Ethical practice of dentistry Students must demonstrate competence in the application of the principles of ethical decision making and professional responsibility. (CODA 2-20)	VQ, DCE
9. Evidence-based dentistry Students must demonstrate competence to access, critically appraise, apply and communicate scientific and lay literature as it relates to providing evidence-based patient care. (CODA 2-21 and CODA 5-2)	VQ,DCE,MCSA
10. Comprehensive General Dentistry Students must demonstrate competence in providing oral health care within the scope of general dentistry to patients in all stages of life. (CODA 2-22) At a minimum, students must demonstrate competence in providing oral health care within the scope of general dentistry, as defined by the school, including: (CODA 2-23)	VQ, DCE, CCE
10a: Patient Assessment, diagnosis, comprehensive treatment planning, prognosis & informed consent (CODA 2-23a, 5-1, 5-3)	VQ, DCE,CCE
10b: screening & risk assessment for head & neck cancer (CODA 2-23b)	VQ, DCE,CCE
10c: recognizing the complexity of patient treatment & identifying when referral is indicated (CODA 2-23c)	*VQ,DCE*
10d: health promotion & disease prevention, including diet (CODA 2-23d)	*VQ,DCE*
10e: local anesthesia & pain & anxiety control (CODA 2-23e)	*VQ,DCE*
10f: restoration of teeth (CODA 2-23f)	*VQ,DCE,CCE,MCSA*
10p: screening & risk assessment for caries and periodontal disease	*VQ,DCE,MCSA*
13. Emerging Technology in Dentistry Students should be able to evaluate, assess and apply current and emerging science and technology. CODA 2-23: Intent statement and CODA 5-2: Intent statement)	*VQ,DCE,MCSA*

DCE = Daily Clinical Evaluation
MCSA = Multiple choice & short answer
CCE = Clinical Competency Exam
VQ = Verbal questioning (in clinic)
WA = Written assignment

Report Page 17 – (item A) (D3 course) – Evaluation method - …"grade scale is applied to highest individual score"….

According to Dr Holmes, "grading on a curve (or highest score) is inconsistent with competency-based education". Please explain the rationale for using a curve to grade D3s in a competency-based program.

Reply: 100% is adjusted to equal the highest individual score achieved then the % scale follows from there. Competency-based components are also included as pass/fail within the clinical component of the course grade.

Report Page 18 – (D3 course) – Outcome – "see attached document", but there are no attached documents with outcome & assessment /evaluation method for D3 course.

Reply: Please see pp. 25-26 (in original report) for assessment methods

Report page 22 to 24 (Section F) – D3 course - All of the CODA standards & Collegiate Competencies (# 1 to 13) are listed, but none of the ways in which each are addressed in this course are listed at all. Many of the Collegiate competencies are bolded and some are not bolded. The work group is wondering if bolding means that those are addressed in the course & the non-bolded are not ?

Reply: No

How each CODA standard/Collegiate Competency is addressed in this course needs to be listed in the same way that the D1 courses list this on pages 10 & 13. Please re-submit Section F to the work group for the D3 course.

Reply: see below

A. List the CODA standards addressed in this course? (D3 course)	
CODA Standard	**Addressed through:** *(reference course goal/objective)*
CODA 2-9	Critical thinking & problem-solving Students should be able to apply critical thinking principles by integrating the information gathered from the patient diagnosis and apply it into a comprehensive prognosis and treatment management. Application of scientific evidence, problem solving and clinical decision making are areas expected to assess in their daily clinical evaluation.
CODA 2-10	Self-assessment & self-directed lifelong learning Students must demonstrate in each clinical experience progression towards the ability to independently gather information, self-assess such information and demonstrate the capacity to improve their knowledge base, cognitive and clinical skills and self-directed learning proficiency.
CODA 2-14	Application of Biomedical Sciences The students are expected to assess the patient comprehensively to promote and maintain their oral health. Demonstrate the knowledge of individualized diagnosis and treatment for conditions of the human dentition that fall within the scope of Operative Dentistry, such as, disease control, preventive, chemotherapeutic and restorative therapies based upon proper diagnosis.
CODA 2-15	Application of Behavioral Sciences –

	Students must demonstrate progression towards competency in the application of the fundamental principles of behavioral sciences as they pertain to patient-centered approaches for promoting, improving and maintaining oral health by assessing the patients' caries risk factors and providing alternative preventive and therapeutic treatments.
CODA 2-16	Interpersonal and communication skills within a diverse population. Students must demonstrate progression towards competency in managing a diverse patient population and have the interpersonal and communications skill to function successfully in a multicultural work environment.
CODA 2-17 5-3, 5-8, 5-9 CODA 2-18	Managing the practice of dentistry Students must demonstrate progression towards competency in applying legal and regulatory concepts related to their patient's oral health care services and managing the dental practice.
~~CODA 2-19~~	~~7. Interprofessional health care~~ ~~Students must demonstrate competence in communicating and collaborating with other members of the health care team to facilitate the provision of health care.~~
CODA 2-20	Ethical practice of dentistry Students must demonstrate ethical principles by treating patients, faculty, staff and peers in professional manner.
CODA 2-21	Evidence-based dentistry Students must demonstrate progression towards competency in application of evidence based dentistry into their daily clinical decision making related to their patients diagnosis, prognosis and treatment planning.
CODA 2-22 CODA 2-23	Comprehensive General Dentistry The student should be able to show progression towards independent diagnosis and treatment of conditions of the human dentition that fall within the scope of Operative Dentistry. Demonstrating the key role of disease control and the integration of comprehensive care of our patients. Emphasizing on the preventive therapies for caries and minimal invasive surgical treatment. During each daily clinical environment, the student should be able to provide to the faculty a comprehensive patients' assessment and treatment planning process in order to insure that preventive and restorative procedures to be delivered are appropriate for the patient's comprehensive care. Students are expected to progress toward competency in the restoration of teeth with the appropriate restorative materials and understand the physical and biological principles upon which these procedures are based. Students should demonstrate satisfactorily completion of: 1) Essential experiences in Operative Dentistry including diagnostic, preventive and restorative procedures. 2) Passing three competency exams: Class II primary caries lesion restored with amalgam or resin based composite; Class III or IV primary or secondary lesion restored with resin based composite restorations; and an additional complex restoration.

CODA 2-25	Students must participate in community-based learning experiences. eg. Project Sealed
CODA 2-23: Intent statement	Emerging Technology in Dentistry Students will be able to demonstrate initial clinical skills progression towards competency in the application of emerging technology with their patients. Students are exposed to limited cases in their daily clinical experiences.

Report page 23 – (CODA 2-19/Collegiate Competency # 7 – Interprofessional health care)(IPE) - Many course directors confuse CODA 2-19 with Intra-professional health care, but the CODA standard actually refers to between health professions (i.e., nursing, medicine, PT, pharmacy). If this D3 course addresses Interprofessional health care, then please include that CODA standard on page 23 and just explain how this is addressed in this D3 course. If not, just delete it from page 23 (& delete it in curriculum mapping module for this course).

Reply: CODA 2-19 deleted, see above.

Report page 24 – Section I - …interactive discussion… - What is TBL ? Is that just a typo for PBL ?

Reply: TBL = Team-based learning

In the original report (2- 21 -15), the Department requests the following changes that need to be addressed by Curriculum committee :

(see Section IX (page 4) and Section XIII (page 7) in original report – "What resources directly related to curriculum management would facilitate your ability to fulfill the teaching mission (time, space, faculty development, course support):

- D2 Oper - Thursdays from 8am to 8:30 make time available for didactic (to share with other D2 clinical courses (D2 Prev, D2 OD, D2 Radiology))
- D2 Oper – Simplified & more flexible Tues & Thurs AM scheduling
- D2 Oper – Improved student readiness or support to make radiographs
- D2 Oper – Restructured single Oper Dent II course (Oper:8240)(course merge form approved by Dr Garcia)
- D3 Oper - Students "progressing toward competency" or obtained competency to make radiographs
- D3 Oper – Students "progress toward competency" in clerkship & are deemed competent in D4 year
- D1-D3 -Oper – Digital Lab Tech support
- D1-D3 Oper – Continued tutor support
- D1-D3 Oper – Continued video production & editing support
- D1-D3 Oper – Continued support of teaching administration time for faculty course directors
- D1-D4 CoD – Collegiate topic mapping modeled after Oper curriculum topic mapping or a searchable curriculum topic mapping database
- D1-D4 CoD – Simple and continuously available access to all ICON courses for all faculty & students
- D1-D4 CoD – A single collegiate clinical learning guide and evaluation form
- D1-D4 CoD – Continued faculty development support from central administration
- D1-D4 CoD – ICCMS codes/staging in Axium & faculty training for implementation of collegiate caries management curriculum