

## Course Outcomes Assessment

**Course/Program Title:** DHY 201 Dental Hygiene Theory III    **Date:** 12/12/17

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### **Expected Learning Outcomes:**

1. Preparation for National Board Dental Hygiene Examination (NBDHE) and the Commission on Dental Accreditation (CDCA) Computer Simulated Clinical Exam (CSCE).
2. Design comprehensive dental hygiene therapy incorporating specialized skills and the proactive role in oral disease prevention, patient care and disease management.

### **Assessment: (How do or will students demonstrate achievement of each outcome? Please attach a copy of your assessment electronically.)**

1. Professional Meeting Reflection Papers: Students attend two professional meetings and write papers about their experience. The content includes answers a series of questions which guide them through reflecting on what they have learned about the profession of dental hygiene on both cognitive and affective levels.
2. Quizzes: Six quizzes are given which cover lecture, reading and homework assignments for small sections of material.
3. Exams: Three tests are given throughout the semester, which cover lecture material, homework, reading assignments and reinforce previous material that was quizzed.
4. National Dental Hygiene Board Exam (NBDHE) Results: This is a national licensure exam required by all jurisdictions in the United States. Content covers all coursework from the dental hygiene program. The purpose of the NBDHE is to assist state boards in determining qualifications of dental hygienists who seek licensure to practice dental hygiene. The examination assesses the ability to understand important information from basic biomedical, dental and dental hygiene sciences, and the ability to apply such information in a problem-solving context. State boards use the information provided by the NBDHE to help protect the public health.
5. Commission on Dental Accreditation (CDCA) Computer Simulated Clinical Exam (CSCE) Results: This is a regional licensure examination accepted by 28 jurisdictions for dental hygiene licensure. The CSCE content is developed by a Dental Hygiene Examination Committee, which has considerable content expertise and also relies on practice surveys, current curricula, standards of competency and guidance for clinical licensure examinations in dentistry and dental hygiene from the American Association of Dental Boards (AADB) to ensure that the content and protocol of the examination are current and relevant. The examination content and evaluation methodologies are reviewed annually and periodically change to reflect current best practices. Because of the broad-based approach to test

development, no single textbook or publication can be used as a reference. The examination is based on concepts taught and accepted by educational institutions accredited by the American Dental Association or Canadian Commission on Dental Accreditation. Any current textbook relevant to the subject matter of the examination utilized in such institutions is suitable as a study reference. Simulations of actual patients are illustrated through computer-enhanced photographs, radiographs, optical images of study, and working models, laboratory data, and other clinical digitized reproductions.

**Validation: (What methods have you used or will you use to validate your assessment?)**

1. Professional Meeting Reflection Papers: Papers are evaluated using a grading rubric that includes recognition of professional issues, identification of how personal beliefs, expectations and assumptions integrate with other dental hygienists, completion of all writing prompts, and writing mechanics. Quality of written work and grades are compared to data from previous semesters, questions are reviewed annually to improve the value of this assignment to student learning and professional growth. **(90% of students achieve an average of 75% or higher on all reflection papers)**

2. Quizzes: Quizzes are constructed based on current dental hygiene theory and practice and scientific evidence. An item analysis is conducted by the lead instructor to validate each quiz. **(90% of students achieve an average of 75% or higher on the average of all quizzes)**

3. Exams: Exams are constructed based on current evidence based practices and board exam content. An item analysis is conducted by the lead instructor to validate each exam. **(90% of students achieve an average of 75% or higher on the average of all exams)**

4. National Dental Hygiene Board Exam Pass Rates: DHY 201 is offered during the second semester of the dental hygiene program and all students take the NBDHE at the end of the fourth semester; therefore, the results listed below will be for the previous cohort. The NBDHE provides a d-value representing the standardized difference between the school's average standard score and the national average standard score. Scores are reported as Pass or Fail, passing is  $\leq 75\%$ . **(100% of students pass the NBDHE on the first attempt)**

5. CDCA CSCE Pass Rates: This is a regional licensure exam required for dental hygiene licensure in the State of Maryland. DHY 201 is offered during the second semester of the dental hygiene program and all students take the CDCA CSCE at the end of the fourth semester; therefore, the results listed below will be for the previous cohort. Scores are reported only as Pass or Fail, passing is  $\leq 75\%$ . **(100% of students pass the CDCA CSCE on the first attempt)**

**Results: (What do your assessment data show? If you have not yet assessed student achievement of your learning outcomes, when is assessment planned?)**

I have chosen to compare data from the first 3 cohorts to analyze results, second year classes were not offered in Fall 2014.

1. Reflection Papers: Student performance on reflection papers was consistent for the first 2 years and the average score decreased by 10% for the third year. The decrease is likely due to changes in grading rubric that resulted in a more rigorous grading criteria. The decrease may also be attributed to two students who did not submit one of the two required papers and received a grade of zero and did not meet the benchmark. **(16/18 students achieved an average of 75% or higher on all reflection papers. Range of reflection paper averages: 100%-48.3%)**

2. Quizzes: Student performance on quizzes remained consistent between the second and third cohorts. Three students in the third cohort received a grade of zero on one or more quizzes due to unexcused absences. This accounts for the lower number of students who were able to meet the benchmark. **(16/18 of students achieved an average of 75% or higher on the average of all quizzes. Range of quiz averages: 95.77%-54.23%)**

3. Exams: Student performance on exams improved 2% between the first and second cohorts, but then decreased by 5.4% between the second and third cohorts. The course content was revised and the textbook was changed between years two and three, this may account for the decrease in average exam scores. One student requested a late withdrawal during the last month of class, the resulting zero on the remaining exam lowered the class average. **(17/18 or 81% of students achieved an average exam score of 75% or higher. Range of exam averages: 92.08%-61.16%)**

The data for the 3 measures discussed above is presented in the following table.

Cohort	Reflection Paper Average (2 per semester)	Quiz Average	Exam Average	Final Course Grade Distribution
Fall 14 (n=0)	N/A	N/A	N/A	N/A
Fall 15 (n=20)	97.8%	82.2%	87.1%	A-10 B-7
Fall 16 (n=18)	97.3%	86%	89.1%	A- 10 B- 10
Fall 17 (n=18)	87.5%	86%	83.7%	A-4 B-12 C-1 D-1

4. National Board Dental Hygiene Exam Scores: The NBDHE provides a d-value representing the standardized difference between the school's average standard score and the national average standard score for each content section on the exam. For 2016 results were reported by month and scored data was calculated only for the candidates who tested that month, not the entire cohort. Specific results for each section from 2016 are of minimal value due to being reported in 2 parts of the entire cohort of 17 (n=14 and n=3). The 2017 results were communicated monthly with the entire cohort included in the statistics. The data in the table below includes Class of

2017 graduates who took the NBDHE between September 2016 and August 2017, n=16. At the time of this writing two graduates from the Class of 2017 have not taken the NBDHE and one graduate took the exam in October 2017, that score is not yet available. **(16/16 students from the Class of 2017 took and passed the NBDHE between May and August 2017 on their first attempt.)**

A d-value representing the standardized difference between your school's average raw score (i.e., average number correct) and the national average for each of the disciplines covered on the examination. *Please note that a d-value is a standardized value representing the distance between your school's average and the national average in standard deviation units. A positive d-value of 1.0 indicates that your school average is one standard deviation above the national average. A d-value of -1.0 indicates that your school average is one standard deviation below the national average. A d-value of 0 would indicate that your school's average falls directly on the national average.*

Discipline (relevant to DHY 202)	Class of 2016 (n=14, reporting by month, May)	Class of 2016 (n=3, reporting by month, June)	Class of 2017 (n=16, reported as entire cohort May-Aug, 3 students have not taken this exam as of Dec 2017)
Anatomic Science	0.86	1.02	-0.01
Physio - Biochem - Nutrition	-0.14	-1.10	-0.09
Microbiology - Immunology	0.14	0.65	-0.53
Pathology	-0.39	-0.33	-0.07
Pharmacology	2.28	0.59	0.22
Patient Assessment	-0.54	0.57	-1.25
Radiology	-0.17	-0.19	-0.42
Management of DH Care	2.17	1.99	0.54
Periodontology	-0.30	0.20	-0.90
Preventive Agents	-1.14	-4.70	1.20
Supportive Treatment	-1.53	2.16	-0.16
Professional Responsibility	-0.38	-1.99	-0.34
Community Health	-1.33	-1.20	0.06
Cases	0.58	1.19	-0.52
NBDHE Score	-0.12	-0.57	-0.38

5. CDCA Computer Simulated Clinical Exam: 19 students from the Class of 2017 attempted the CSCE from April to October 2017. **(19/19 students from the Class of 2016 took and passed the CSCE between April and October 2017 on their first attempt.)**

**Follow-up: (How have you used or how will you use the data to improve student learning?)**

1. Quizzes: Revisions to quizzes were made based on the content realignment and textbook change for this course. Despite changes to quizzes, the average scores remained the consistent with last year. Continue current quiz content again next year.

3. Exams: Exam scores improved 2% from 2015 to 2016 but decreased by 5.4% from 2016 to 2017. This is likely due to curriculum realignment and a change in textbook. Revisions to exam content should be made to better match course and board exam content. Improvements in lecture materials and delivery of the course will contribute to improved exam scores.

4. NDBHE and CDCA Results: The results to date suggest that the program is meeting its goals and the students are achieving successful outcomes. However, NBDHE scores were lower in most categories from the first cohort to the second cohort. NBDHE scores also continue to be slightly below the national average. Revisions to curricula to improve the lowest scoring content areas need to be explored and implemented.

5. Weight of Assignments and Grade Distribution: Grade distribution improves slightly from year 2 to year 3. The weight of assignments and exams is reviewed each year to ensure points awarded are distributed appropriately and accurately measure student learning. The program grade scale is currently 75%-79% =C, 80%-89%=B and 90%-100%=A. This is not an even distribution and is artificially inflating grades into the A and B range. The program grading scale should be evaluated and adjusted for a more even scale which would in turn create a more accurate grade distribution in a Bell Curve with A's, B's and C's.

6. Student Learning Outcomes and Program Competencies: The Learning Outcomes listed on the Master Syllabus need to be revised to be measurable and more descriptive of what the course is designed to accomplish. Currently they are inaccurate and not readily measurable. Additionally, the 7 major program competencies and sub-competencies need to be evaluated and revised for accuracy. This was suggested in the Program Manual Revisions meeting with Drs. Ohl-Giglotti, Weaver and D'Ambrisi in April 2017. Revising the program competencies, outcomes and goals will better align SLOA, curriculum management and accreditation maintenance. This project should be undertaken at the end of this academic year, beginning in May 2018.

**Budget Justification: (What resources are necessary to improve student learning?)**

No additional resources are needed at this point. Continued support from HCC to allow students to attend board review activities on and off campus will continue to assist students in successful completion of licensure examinations.