

## Course Outcomes Guide

**Course/Program Title:** DHY 116 – Dental Pharmacology

**Date:** Spring 2019

**Course/Program Team:** Jennifer Suminski

**Expected Learning Outcomes:**

- Evaluate the human physiology and importance of drug safety and use in the dental practice.
- Formulate a healthy and ethical perspective for drug usage in dental procedures.

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

**In the Spring 2018 semester, this class adopted a weighted grading model versus a straight points scale. This was done in order to prevent ancillary assignments from buffering low grades on exams and quizzes. More percent points were added to assignments which had the students using critical thinking skills, such as case studies, exams, and quizzes.**

1. Examinations - Exams are constructed based on material covered during class and also contains board exam content. An exam review is provided prior to each exam which contains questions that have a similar format as the actual exam which helps determine the quality of questions. The exams are worth 100 points each and account for 50% of the student's grade and this course does not include a comprehensive final exam.
2. Quizzes - Five (5) quizzes are given which cover lecture, reading and homework assignments for small sections of material. The quizzes are worth 10 points each and account for 15% of the student's grade.
3. Weekly Review Questions - Each student is required to complete a set of questions correlating to each week's topics covered in class. This is designed to strengthen retention of information and reading and study habits to prepare for class, quizzes, and examinations. The weekly chapter review questions are worth 10 points each and account for 5% of the student's grade.
4. Case Study Assignments – Each student is assigned three (3) case studies through the semester to complete on dentalcare.com which provides a patient history, periodontal chart, study model, radiographic images, and intraoral images. The questions that accompany each case study are questions that will be provided are provided by the instructor to help prepare each student for board exams and patient care through strengthening the student's conceptual skill set. Students are also required to fill out a treatment plan for some case studies, which follows the Standards for Clinical Dental Hygiene Practice set forth by the American Dental Hygienists' Association. This assignment is worth 25 points each and accounts for 15% of the student's grade.

- Drug Reference Cards – The purpose of this assignment is to enhance retention of common drug names the student will see during patient care. The student is required to complete forty-five (45) drug reference cards. The instructor will assign one or more drug classes each week for the student to complete and submit by the next class session. The student will choose one drug from the assigned drug class(es) and fill out an index card with the following required information: generic name and brand name, drug class and uses for the drug, pregnancy category, frequent adverse reactions/side effects which could modify patient treatment or prompt patient education topics or product/home care recommendations, and if a medical/dental consult required to assess disease control. Each drug reference card is worth five (5) points. Points are awarded for this assignment based on completion. This assignment is worth 225 points and accounts for 10% of the student's grade.

Assignment	Points	Weighted %
Examinations (5 @ 100 points each)	500	50%
Quizzes (5 @ 10 points each)	50	15%
Weekly Chapter Review Questions (13 @ 10 points each)	130	5%
Drug Reference Cards (45 @ 5 points each)	225	10%
Case Study Assignments (3 @ 25 points each)	75	15%
Classroom Engagement	52	5%
<b>Total</b>	<b>1032 points</b>	<b>100%</b>

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

- Examinations - An exam review is provided prior to each exam which contains questions that have a similar format as the actual exam which helps determine the quality of questions. Questions that are also reused from semester to semester are analyzed for clarity based on the number of students who did not answer the question correctly during the previous semester.  
**Goal – 85% of students achieve a 75% or higher on each exam.**
- Quizzes - Questions that are reused from semester to semester are analyzed for clarity based on the number of students who did not answer the question correctly during the previous semester.  
**Goal – 85% of students achieve a 75% or higher on each quiz.**
- Weekly Chapter Review Questions - Questions are taken directly out of the in-class lecture so the student can follow along and have the opportunity to finish the question set in class the same day. Questions that are reused from semester to semester are analyzed for clarity based on the number of students who did not answer the question correctly during the previous semester.  
**Goal – 95% of students achieve a 75% or higher on each set of review questions.**
- Case Study Assignments – Questions provided to students follows the Standards for Clinical Dental Hygiene Practice set forth by the American Dental Hygienists'

Association. Questions that are reused from semester to semester are analyzed for clarity based on the number of students who did not answer the question correctly during the previous semester.

**Goal – 80% of students achieve a 75% or higher on each case study.**

5. Drug Reference Notebook – Drug classes provided to students are the most common drug classes that the student will see during clinical practice. Points are awarded based on accuracy of the drug and drug class required for the week and also based on completion.

**Goal – 95% of students achieve a 75% or higher on each set of drug reference cards.**

6. Students must successfully demonstrate skills learned in this course and receive a grade of 75% (C) or higher to progress in the Dental Hygiene Program.

**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 four cohorts I have taught.

1. Examinations – Average score and pass rate of 75% or higher analyzed

In the Spring 2016 cohort, this course had three (3) exams, whereas the Spring 2017 cohort and onward had five (5).

**Average Scores**

Cohort	Exam #1	Exam #2	Exam #3	Exam #4	Exam #5	Average %
<b>Spring 2016 (n=20)</b>	94.4%	89.9%	98.9%	N/A	N/A	94.4%
<b>Spring 2017 (n=18)</b>	88.8%	88.1%	83.4%	83.8%	86.3%	86.1%
<b>Spring 2018 (n=19)</b>	95.1%	95.7%	92.7%	91.3%	90.3%	93.0%
<b>Spring 2019 (n=16)</b>	91%	97.1%	87.6%	85.8%	89.4%	90.2%

**Pass Rate Analysis – 75% or Above**

Cohort	Exam #1	Exam #2	Exam #3	Exam #4	Exam #5	Average Pass Rate
<b>Spring 2016 (n=20)</b>	100%	90%	100%	N/A	N/A	96.7%
<b>Spring 2017 (n=18)</b>	100%	94.4%	100%	88.9%	100%	96.7%
<b>Spring 2018 (n=19)</b>	100%	100%	100%	100%	100%	100%
<b>Spring 2019 (n=16)</b>	93.8%	100%	87.5%	93.8%	100%	95.0%

2. Quizzes – Percentage of Students Achieving a Pass Rate of 75% or Higher

In the Spring 2016 cohort, this course had seven (7) quizzes, whereas the Spring 2017 cohort had six (6) and the Spring 2018 cohort and onward had five (5).

<b>Cohort</b>	<b>Quiz 1</b>	<b>Quiz 2</b>	<b>Quiz 3</b>	<b>Quiz 4</b>	<b>Quiz 5</b>	<b>Quiz 6</b>	<b>Quiz 7</b>	<b>Average %</b>
<b>Spring 2016 (n=20)</b>	70%	80%	85%	80%	85%	60%	100%	80.0%
<b>Spring 2017 (n=18)</b>	94.4%	94.4%	72.2%	100%	77.8%	91.1%	N/A	88.3%
<b>Spring 2018 (n=19)</b>	84.2%	78.9%	94.7%	94.7%	73.7%	N/A	N/A	85.2%
<b>Spring 2019 (n=16)</b>	93.8%	93.8%	81.3%	93.8%	62.5%	N/A	N/A	84.3%

3. Weekly Chapter Review Questions – Average Score of the Set of Ten Chapter Review Questions

<b>Cohort</b>	<b>Total Average of Review Question Scores</b>
<b>Spring 2016 (n=20)</b>	100%
<b>Spring 2017 (n=18)</b>	94.7%
<b>Spring 2018 (n=19)</b>	92.6%
<b>Spring 2019 (n=16)</b>	91.6%

4. Case Study Assignments – Percentage of Students Achieving a Pass Rate of 75% or Higher

<b>Cohort</b>	<b>Case Study 1</b>	<b>Case Study 2</b>	<b>Case Study 3</b>	<b>Average %</b>
<b>Spring 2016 (n=20)</b>	75%	100%	100%	91.7%
<b>Spring 2017 (n=18)</b>	88.9%	61.1%	33.3%	61.1%
<b>Spring 2018 (n=19)</b>	68.4%	94.7%	63.2%	75.4%
<b>Spring 2019</b>	93.8%	68.8%	68.8%	79.3%

(n=16)				
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5. Drug Reference Notebook/Cards – Percentage of Students Achieving a Pass Rate of 75% or Higher

<b>Cohort</b>	<b>Drug Reference Pass Rate %</b>
<b>Spring 2016 (n=20)</b>	95%
<b>Spring 2017 (n=18)</b>	100%
<b>Spring 2018 (n=19)</b>	N/A
<b>Spring 2019 (n=16)</b>	100%

6. Number of students passing the course with 75% or higher, along with the grade distribution and average.

<b>Cohort</b>	<b># of Students with 75% or Higher n (%)</b>	<b>Total Class Grade Average %</b>
<b>Spring 2016 (n=20)</b>	20 (100%)	92.4%
<b>Spring 2017 (n=18)</b>	18 (100%)	88%
<b>Spring 2018 (n=19)</b>	19 (100%)	90.3%
<b>Spring 2019 (n=16)</b>	15 (93.8%)	88.4%

Grade distribution between cohorts.

<b>Cohort</b>	<b>Letter Grade A n (%)</b>	<b>Letter Grade B n (%)</b>	<b>Letter Grade C n (%)</b>	<b>Letter Grade F n (%)</b>
<b>Spring 2016 (n=20)</b>	13 (65.0%)	7 (35.0%)	0 (0%)	0 (0%)
<b>Spring 2017 (n=18)</b>	4 (22.2%)	14 (77.8%)	0 (0%)	0 (0%)
<b>Spring 2018 (n=19)</b>	10 (52.6%)	9 (47.4%)	0 (0%)	0 (0%)
<b>Spring 2019 (n=16)</b>	11 (68.8%)	4 (25.0%)	0 (0%)	1 (6.2%)

### Weight of Assignments and Grade Distribution:

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.

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

Overall, the grades for quizzes, weekly review questions, and examinations are fairly consistent and do not need any adjustment at this time.

The Case Study Assignments scores were inconsistent. I would also like to re-do the grading scheme for this assignment and implement a formal standardized rubric and directions or an example for the students to reference.

The Drug Reference Cards is an important aspect of the course learning objectives, and I was able to rework the assignment this year and the assignment was easily implemented as well as easily completed by students to enhance drug information retention from week to week.

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

No additional resources are needed at this point.