 COURSE SYLLABUS

COURSE NO., HOURS AND TITLE: DH 440-3  Research Methodology

COURSE INSTRUCTOR:  Charla Lautar, RDH, PhD

OFFICE HOURS:  Office: Room C0128/ASA Building, Wing C
Office Hours: M 9:-10:00, 1:-2:00; W 10:-12:00, R 3:-5:00
or by appointment
Telephone: office (618) 453-7298; home (618) 998-0770
Fax: (618) 453-7020
E-mail: cjlautar@siu.edu

MEETING TIMES AND LOCATION:  Lecture: three hours weekly, Monday 2:00-4:50,
Location: ASA Rm 15
Course date: August 24 to December 18, 2015
Final Exam: December 14, 2015; 2:45-4:45

ACADEMIC HONESTY: All students are expected to adhere to a strict code of academic
honesty. Academic dishonesty will be addressed according to the “Policies and Procedures
Applicable to Academic Dishonesty” as stated in the “Important Information for Students,
Faculty, & Staff” booklet.

From the “Student Conduct Code”, section II, article A:

Acts of Academic Dishonesty:

1. Plagiarism, representing the work of another as one’s own work;
2. Preparing work for another that is to be used as that person’s own work;
3. Cheating by any method or means;
4. Knowingly and willfully falsifying or manufacturing scientific or educational data and
representing the same to be the result of scientific or scholarly experiment or research;
5. Knowingly furnishing false information to a university official relative to academic
matters;
6. Soliciting, aiding, abetting, concealing, or attempting conduct in violation of this code.

Sanctions will be imposed for violations of this policy in accordance with the Student Conduct
Code. A copy of the “Important Information for Students, Faculty & Staff” booklet can be
obtained from the Office of the Vice Chancellor for Student Affairs, Mailcode 4308, Southern
Illinois University, Carbondale, IL 62901-4308.

Dental Hygiene Specific Academic Dishonesty System: If a student is involved in any acts of
academic dishonesty, they will be disciplined. The disciplinary action will be decided by the
faculty for the course as well as the Program Director for Dental Hygiene. The disciplinary
action will also be documented in the students’ permanent file. The student will sign a form that
states they understand and agree with discipline.

ADA ACCOMMODATIONS: If any student needs special services please contact the instructor or
Disabled Student Services/University Support Services (453-5738).
EMERGENCY PROCEDURES: Southern Illinois University Carbondale is committed to providing a safe and healthy environment for study and work. Because some health and safety circumstances are beyond our control, we ask that you become familiar with the SIUC Emergency Response Plan and Building Emergency Response Team (BERT) program. Emergency response information is available on posters in buildings on campus, available on bert's website at www.Bert.siu.edu, Department of Safety's website www.dps.siu.edu (disaster drop down) and in Emergency Response Guideline pamphlet. Know how to respond to each type of emergency.

Instructors will provide guidance and direction to students in the classroom in the event of an emergency affecting your location. It is important that you follow these instructions and stay with your instructor during an evacuation or sheltering emergency. The Building Emergency Response Team will provide assistance to your instructor in evacuating the building or sheltering within the facility.

COURSE DESCRIPTION (taken from the 2015-2016 Undergraduate Catalog):

This course introduces the fundamental principles of research methodology with an emphasis on how these principles are applied for conduction research in the field of dental hygiene. A brief overview of the scientific method will be presented with a concentration on research planning, research designs, data collection, descriptive statistics, inferential statistics, and dissemination of research. Not for graduate credit. Prerequisite: DH 355

PROGRAM COMPETENCIES:

C.3 Use critical thinking skills and comprehensive problem-solving to identify oral health care strategies that promote patient health and wellness.

C.4 Use evidence-based decision making to evaluate emerging technology and treatment modalities to integrate into patient dental hygiene care plans to achieve high-quality, cost-effective care.

C.5 Assume responsibility for professional actions and care based on accepted scientific theories, research, and the accepted standard of care.

C.7 Integrate accepted scientific theories and research into educational, preventive, and therapeutic oral health services.

HP.5 Evaluate factors that can be used to promote patient adherence to disease prevention or health maintenance strategies.

COURSE OBJECTIVES:

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

1. critique published articles in dental and non-dental journals by applying information presented in the text and in class

2. discuss the parameters of the scientific method and evidence-based health research

3. explain the scope of research planning including sampling, external validity, causation, and internal validity.
4. compare and contrast true experimental research designs, quasi-experimental, and survey designs.

5. describe single subject (system) and qualitative field research.

6. identify data collection procedures that are appropriate for each research design.

7. explain the statistical procedure that is appropriate for various research designs and research questions.

8. explain the practical application the research findings have to clinical practice.

9. apply appropriate protocol for developing and presenting a poster at a professional meeting.

**COURSE OUTLINE:**

<table>
<thead>
<tr>
<th>Topics</th>
<th>Percentages</th>
</tr>
</thead>
<tbody>
<tr>
<td>I. Research Principles and Design</td>
<td>60%</td>
</tr>
<tr>
<td>A. Terminology</td>
<td></td>
</tr>
<tr>
<td>B. Literature Review and Sources</td>
<td></td>
</tr>
<tr>
<td>C. Human Subjects Protocol/IRB</td>
<td></td>
</tr>
<tr>
<td>D. Data Collection (Qualitative and Quantitative)</td>
<td></td>
</tr>
<tr>
<td>E. Analysis and Statistical Testing</td>
<td></td>
</tr>
<tr>
<td>F. Dissemination of Findings (Reporting and Publishing)</td>
<td></td>
</tr>
<tr>
<td>II. Critique/Critical Evaluation of a Research Article</td>
<td>20%</td>
</tr>
<tr>
<td>III. Development and Presentation of Poster at Professional Meeting</td>
<td>20%</td>
</tr>
</tbody>
</table>
TEXTBOOK:

Required:


Handouts (i.e., journal articles) will be given/cited in class, e-mailed, or posted on D2L.

ATTENDANCE POLICY:

Attendance is mandatory and students are expected to attend all classes. If students are sick or need to be excused from class, they must notify the instructor. Makeup quizzes and other assignments will be at the discretion of the instructor and treated individually. Students must be attentive to receive their participation points. Students will be asked to leave class because of excessive talking, disrespecting classmates or other disruptions; student participation points will be forfeited. Disruptions include coming late to class and collecting belongs before class is over.

COURSE DELIVERY/METHODOLOGY:

The course will consist of (but not limited to) lectures, guest presentations, in-class activities, poster session presentation, on-line ethical research certificate, and an article review.

GRADING:

How the final grade is calculated:

<table>
<thead>
<tr>
<th>Assignment</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Poster Presentation</td>
<td>20 pts</td>
</tr>
<tr>
<td>Tests (3 @ 10 pts each)</td>
<td>30 pts</td>
</tr>
<tr>
<td>Article Review &amp; Roundtable</td>
<td>10 pts</td>
</tr>
<tr>
<td>Final Exam</td>
<td>20 pts</td>
</tr>
<tr>
<td>Participation</td>
<td>10 pts</td>
</tr>
<tr>
<td>NIH Module &amp; other assignments</td>
<td>10 pts</td>
</tr>
<tr>
<td>Total Points</td>
<td>100 pts</td>
</tr>
</tbody>
</table>

Students will be expected to obtain copies of peer-reviewed articles from Morris Library or the internet for use in course assignments.

Poster presentation: A poster will be presented to classmates and faculty during class and to dental professionals at the annual Dental Hygiene Homecoming Continuing Education Course at the SIUC Student Center (Friday, October 23, 2015). This project is worth 20% of your total grade. The main topic will be Nutrition, but students will need to focus on something specific that will be of interest to dental hygienists as oral health professionals and as consumers. Here are some examples: vegan vs vegetarian diets, sports drinks, farm to table initiatives, vitamin D deficiency, etc. Need to have professional references such as journals, etc. Topics need to be approved by instructor as they should not be duplication of topics. Students will work in pairs. See attachments.

Exams: The course will have three tests worth 10% each (total 30%) and a comprehensive final exam (December 14, 2015) worth 20%. Quizzes and final exam will be multiple-choice questions, and will include testlets.

Participation: Students are expected to read the chapters before coming to class. Participation points (10%) include attendance, attitude, and other in-class assignments. Students must be attentive to receive their participation points. Students will be asked to leave class because of excessive talking, disrespecting classmates or other disruptions; student participation points will be forfeited. Disruptions include coming late to class and collecting belongs before class is over. How can one participate if one is not physically and mentally present?

Article review: Students will be expected to review a research article and answer questions. Then students will present the article in groups of four. Classmates should discuss and critique as if participating in a professional
roundtable. Students will then submit final “article review” taking in comments from their classmates. Students will be responsible for reading the other three articles from their group. See attachment.

NIH ethics and research module: Students will complete an on-line NIH training via website.

http://phrp.nihtraining.com/users/login.php

This assignment and other homework assignments together will be worth 10%.

**Grading scale:**

- 90-100% or 90-100 points = A
- 80-89% or 89-80 points = B
- 70-79% or 79-70 points = C
- 69% or below 69 points = F and students must repeat the course

**MINIMUM GRADE REQUIREMENT:**

Students must pass this course with a “C” or better to graduate from the Dental Hygiene Program. If a “C” is not earned, the student must retake the course.

**INSTRUCTIONAL OBJECTIVES:**

Mastery of the following instructional objectives will lead toward mastery of SIU Dental Hygiene Program Core Competencies. Instructional Objectives will be evaluated by written tests including vignettes, article review, and poster presentation. **Objectives will be taught to the Mastery (M) Level.** These objectives are taken from the Nathe textbook chapters 14-19 and will also be found in a separate course file on D2L.
INSTRUCTIONAL OBJECTIVES:

Mastery of the following instructional objectives will lead toward mastery of SIU Dental Hygiene Program Core Competencies. Instructional Objectives will be evaluated by written tests including vignettes, article review, and poster presentation. **Objectives will be taught to the Mastery (M) Level.** These objectives are taken from the Nathe textbook chapters 14-19.

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

1. Explain the purpose of dental hygiene research. (M)
2. Discuss the use of evidenced-based practice in dental hygiene. (M)
3. Describe the role of ethics in research. (M)
4. Identify the role of government and private entities in research. (M)
5. Explain the connection between research and private practice. (M)
6. Describe and compare various research approaches. (M)
7. Describe various research designs used in oral epidemiology. (M)
8. Describe methods used to conduct research studies. (M)
9. List the parts of a research design. (M)
10. Define oral epidemiology and describe the uses in epidemiology. (M)
11. Relate epidemiology to evidence-based practice. (M)
12. Define common epidemiologic terms. (M)
13. Relate measurements to epidemiology. (M)
14. List and describe various publications that report oral epidemiology in the US. (M)
15. Describe ways to increase validity of epidemiologic research methods. (M)
16. Describe the current epidemiological issues of disease. (M)
17. Describe the current epidemiological issues of conditions. (M)
18. Define and describe data analysis and interpretation. (M)
19. Identify data by their type and scale of measurement. (M)
20. Define and describe descriptive, correlation, and inferential statistics. (M)
21. Select and compute appropriate measures of central tendency and measures of dispersion for various types of data. (M)
22. Select appropriate inferential statistical tests for various types of data.
23. Interpret research results. (M)
24. Describe how to evaluate dental care products. (M)
25. Defend the dental hygienists’ value in advocating the use of effective dental care products and treatment modalities. (M)
26. Educate the public in evaluating dental care products. (M)
27. Effectively critique dental research reported in dental and lay publications. (M)
This is an outline for your presentation. Remember to give the instructor and other three classmates of your group a copy of the article a week before you present. **The article needs to be approved by the instructor before beginning work on the review.** Students can obtain approval by e-mailing the article or placing a hard copy in instructor’s mailbox (room18). Students will have 10 minutes to present the article to a small group of classmates in a Roundtable atmosphere. Students in the group will have 10 minutes to respond to each article and presentation. Students in the group are expected to have read the article and prepared to discuss the following:

1. Identify the purpose of the study.
2. Identify the population of interest.
3. Identify the dependent variable(s). Identify the independent variable(s).
4. Number of subjects. How were subjects solicited?
5. Was blinding used?
   If yes, describe.
6. Name the research design of the study.
7. Describe any reliability testing.
8. State the alpha level that was selected.
9. What type of data was used: nominal, ordinal, interval or ratio?
   Or, combination?
10. Identify one statistical test that was used to test for significance.
11. Identify the obtained p-value AND indicate whether the results were significant.
12. State the null hypothesis.
   Was it rejected or accepted?
13. What online searches did you use?
   Or, did you use printed literature you already had at home?
14. What recommendations or future research was noted by the author(s)?
   Do you have any other?
Poster Presentation Guidelines

Topic: Nutrition

The purpose of the poster presentation is to:

1) increase your understanding of the process used to locate, review, and synthesize scholarly written peer-reviewed articles.
2) provide an opportunity to integrate key points of the articles into a well-written short report.
3) provide an opportunity to develop and present the short report in a poster format.

The poster must include:

1) an abstract of 250 words or less to be available as a handout.
2) a concise introduction section which presents a research question.
3) a reference page (using Manual of the American Psychological Association, 5th ed. format). A minimum of 5 peer-reviewed journal articles must be used.
4) visuals such as graphs, tables, photos.

Materials. The text must be printed on white paper and mounted on darker card stock. The text (mounted on darker paper) is then affixed to a white or black free-standing, tri-fold core board approximately 3’ X 5’. Select an adhesive that will not wrinkle paper. Select colors, quality of paper, and glue that looks professional. Add color with photos, graphs, tables, etc.

Font & Page setup. The size of font used for the poster text must be large enough to be read from a distance of five feet. Use black ink for text. Colored ink may be used in tables and graphs.

Title. The project title must be at the top of the poster. The presenters’ names and school affiliation must be located under the title.

Handouts. A copy of the abstract and the reference list, (not the condensed poster text) must be available to give to interested viewers. Other scholarly handouts may be used.

Time. The entire presentation should range from 5-7 minutes in length, followed by a question/answer period.

Presenters. The presenters must dress professionally for the presentation (including hair, makeup, and fingernails). No spaghetti straps, no belly shirts, no low-cut shirts.

Due dates. See the course schedule for due dates.

The poster will be presented and evaluated in class the weeks preceding the annual Dental Hygiene Homecoming Continuing Education course. Posters will be presented at the SIUC Student Center at the Annual Dental Hygiene Homecoming Continuing Education course on Friday, October 23, 2015.
Poster Evaluation

This poster is worth 20 points or 20% of the grade in DH 440. Please utilize this guide as you develop and present your poster on October 23, 2015 during the Continuing Education Day.

Each item is worth one point.

1. Poster should be overall appealing.
2. Use a tri-fold, table-top poster board, approximately 3’/5’, in white or black.
3. Topics are suitable to the theme of the continuing education.
4. Title on top should be at least one inch and larger than the main part of the poster.
5. Names of presenters are placed directly below title and should be slightly smaller font than title or slightly larger than main text
6. Text should be able to be read at least five feet from poster (larger space may be 8-10 feet). Recommend 24 point font. Text should be in black ink. Text should be on white paper and mounted on color stock.
7. Avoid fancy font. Use upper and lower case fonts. Do not use more than three different fonts. Sans Serif fonts are better than Serif fonts.
8. Poster will begin with a small paragraph (approximately five sentences) as an abstract of the material to be presented.
9. Handouts will be provided that with include abstract and references.
10. References are to be a combination of 5-10 resources including journal articles, textbooks. Internet references should be used with caution and from professional sites.
11. References should be in APA format; another reference style is acceptable if student is consistent in the listing and can identify the reference style.
12. If applicable, define trade names, then use generic names throughout.
13. Poster should have white space and not be solely text. Poster should utilize illustrations such as figures, photos, charts, tables, diagrams, etc. that help convey the message. Colored ink can be used on these visuals for better interpretation and to be eye-catching.
14. Panels are to be neat, orderly, and organized in a pattern to allow easy of reading and to avoid backtracking. Avoid too busy with excessive color, glitter, and tackiness.
15. Poster conveys message and viewer is able to take away a fact and/or enter into interesting/educational conversation with student presenter.
16. Student presenter stays with poster, initiates conversation with participants, and acts professionally with a positive attitude.
17. Student dress professionally. No jeans. Males should wear shirt and tie. Females should avoid spaghetti straps, belly shirts, low-cut shirts, etc.
18-20. These points are given for the information that is conveyed through the poster (ie., grammar, spelling, etc.)

Source for major items above: www.adha.org; www.adea.org; www.apha.org; DeMattei, R., Poster handout with syllabus
<table>
<thead>
<tr>
<th>Class Date</th>
<th>Class Topic</th>
<th>Assignment</th>
</tr>
</thead>
<tbody>
<tr>
<td>August 24</td>
<td>Syllabus; Research in Dental Hygiene; Poster guidelines; Literature review; Ethics; Evidence-based practice; Surveys</td>
<td>Nathe, Chapter 14 Appendix A and B Darby &amp; Walsh, chapter 3</td>
</tr>
<tr>
<td>August 31</td>
<td>Library with Ms. Amber Loos Meet at Morris Library, 1st floor Select Nutrition Topic &amp; Partner</td>
<td>2:00-3:00 Group 1 (17 students) 3:00-4:00 Group 2 (17 students)</td>
</tr>
<tr>
<td>September 7</td>
<td>Labor Day</td>
<td>No Class</td>
</tr>
<tr>
<td>September 14</td>
<td>Research Approaches and Design</td>
<td>Nathe, Chapter 15</td>
</tr>
<tr>
<td>September 21</td>
<td>Review</td>
<td><strong>Test #1</strong> (chapters 14 &amp; 15)</td>
</tr>
<tr>
<td>September 28</td>
<td>Cherie Rippey; Crest/Oral-B</td>
<td>Nathe, Chapter 19</td>
</tr>
<tr>
<td>October 5</td>
<td>Radiology Review</td>
<td><strong>Make appointment with Dr. Lautar and poster partner this week for poster review (10min)</strong></td>
</tr>
<tr>
<td>October 12</td>
<td>Fall Break</td>
<td>No Class</td>
</tr>
<tr>
<td>October 19</td>
<td>Oral Epidemiology</td>
<td>Nathe, chapter 16</td>
</tr>
<tr>
<td><strong>October 23</strong></td>
<td><strong>Mandatory Continuing Education</strong></td>
<td><strong>Poster Presentation</strong></td>
</tr>
<tr>
<td>October 26</td>
<td>Current Epidemiological Findings</td>
<td>Nathe, Chapter 17</td>
</tr>
<tr>
<td>November 2</td>
<td>Biostatistics</td>
<td>Nathe, Chapter 18 <strong>Test #2</strong> (chapter 16 &amp; 17)</td>
</tr>
<tr>
<td>November 9</td>
<td>Biostatistics</td>
<td>Nathe, chapter 18 (cont)</td>
</tr>
<tr>
<td>November 23</td>
<td>Evaluation of Scientific Literature and Dental Products</td>
<td>Chapter <strong>Test #3</strong> (chapter 18)</td>
</tr>
<tr>
<td>November 30</td>
<td>Article Review</td>
<td>Roundtable presentations</td>
</tr>
<tr>
<td>December 9</td>
<td>Course Review</td>
<td><strong>Article Review Due</strong></td>
</tr>
<tr>
<td><strong>December 14</strong></td>
<td><strong>Comprehensive Final Exam</strong></td>
<td><strong>Monday 2:45-4:45</strong></td>
</tr>
</tbody>
</table>
SAFETY AWARENESS FACTS AND EDUCATION
Title IX makes it clear that violence and harassment based on sex and gender is a Civil Rights offense subject to the same kinds of accountability and the same kinds of support applied to offenses against other protected categories such as race, national origin, etc. If you or someone you know has been harmed or assaulted, you can find the appropriate resources here: http://safer.siu.edu

SALUKI CARES
The purpose of Saluki Cares is to develop, facilitate and coordinate a university-wide program of care and support for students in any type of distress—physical, emotional, financial, or personal. By working closely with faculty, staff, students and their families, SIU will continue to display a culture of care and demonstrate to our students and their families that they are an important part of the community. For information on Saluki Cares (217) 453-5714, or ecarer@siu.edu, http://olin.counseling.siu.edu/index.html

EMERGENCY PROCEDURES
Southern Illinois University Carbondale is committed to providing a safe and healthy environment for study and work. We ask that you become familiar with the SIU Emergency Response Plan and Building Emergency Response Teams (BERT) programs. Please reference the Building Emergency Response Protocols for Syllabus attachments on the following pages. It is important that you follow these instructions and stay with your instructor during an evacuation or sheltering emergency.

INCLUSIVE EXCELLENCE
SIU supports people from all walks of life, from many different cultures and sub-cultures, and representing all areas of society, nationalities, ethnicities, lifestyles, and affiliations. Learning from and working with people who differ is an important part of education as well an essential preparation for any career. For more information please visit: http://www.institutionalaffairs.siu.edu/

LEARNING AND SUPPORT SERVICES
Help is within reach. Learning support services offers free tutoring on campus and math labs. To find more information please visit the Center for Learning and Support Services website: Tutoring: http://tutoring.siu.edu/

Math Lab: http://workshops.siu.edu/math_tutoring/index.html

WRITING CENTER
The Writing Center offers free tutoring services to all SIU students and faculty. To find a Center or Schedule an appointment please visit: http://www.siu.edu

AFFIRMATIVE ACTION & EQUAL OPPORTUNITY
SIU is committed to providing a safe and healthy environment for students, faculty, staff, visitors and the general public. The University is committed to the prevention of any discrimination, harassment, and retaliation through a complaint process. For more information visit: http://uao.siu.edu

Additional Resources Available:

SALUKINET: https://salukinet.siu.edu/siabc/loginpage.html

ADVISMENT: http://advisement.siu.edu/

SIU ONLINE: http://uis.siu.edu/

Fall 2018 S-15 Edition