

**HS360 (Sec 1) - Research Design and Methods in Healthcare
Fall 2019 (Tues and Thursday 2-3:15pm room Sci D314)**

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A. Course description

Research is vital to improve healthcare delivery, treatments and for disease prevention. This is an introductory course in the design, experimental methods and critical interpretation of research in the health sciences. This course will cover research topics including approaches to critically review biomedical research publications, research ethics, and evidenced-based healthcare. Students will conduct a group research project that will demonstrate the steps in conducting research, protocol development, data collection, data analysis, presenting research results.

Prerequisite: JR status, Math 95, HS105

B. Format

Three hours lecture per week for sixteen weeks

C. Textbook

None. Reading will be assigned.

D. General goals and objectives

This course will provide students with skills to better understand research in the health sciences. Students will appreciate the importance of research understand the central role of evidenced-based healthcare practices and health outcome evaluation in today's healthcare environment. Students will be also able to demonstrate critical evaluation of research publications and basic knowledge of conducting a research study.

At the conclusion of this course, students will able to:

1. Articulate the importance of research to improve health.
2. Demonstrate an understanding of general research methodology and ethics.
3. Appreciate the scope and complexity of conducting research.
4. Demonstrate skills in critically reviewing research.

E. Grading system

93 – 100	A	77 – 79	C+
90 – 92	A-	73 – 76	C
87 – 89	B+	70 – 72	C-
83 – 86	B	67 – 69	D+
80 – 82	B-	60 – 66	D
		Below 60	F

“A” reflects exceptional work (going beyond the basics, integrating material well, displaying professionalism in individual and group work, application and demonstration of knowledge and skills, showing initiative, using creativity, writing is reflective of multiple drafts).

“B” reflects good work (valuable teamwork skills, active in class, ability to grasp basic concepts and apply to new situations, some participation in class, completes all assignments with a degree of proficiency but may not demonstrate initiative, creativity or reflection consistently, writing contains errors or lacks conciseness and completeness).

“C” reflects average work (assignments are completed at the minimum, basic concepts are grasped but cannot be applied, some difficulty in group work, spelling and grammar mistakes are common, writing is conversational in tone with little attention paid to detail, word choices, organization (rough draft quality), little participation in class.

F. Student responsibilities for successful coursework:

Attendance: This is a hybrid course so please watch the course calendar and monitor your emails for course meeting time changes.

Notify the instructor in person, by telephone or email if an absence is anticipated. Class attendance will be taken. **Students will lose attendance points if they miss 3 or more classes.** Class begins promptly at the scheduled times.

Reading Assignments: Relevant reading will be discussed and handed out in class. The readings will also be posted in D2L. Students will be more successful in the class if the handouts are read before the class period during which a given topic will be covered. The course is focused on discussion and analysis of topics. Readings will prepare you for participation in class.

Written work must be computer-printed (12 point font, double-spaced, 1 inch margins) and written in complete sentences with proper punctuation, spelling and grammar. Student names should be printed in the upper right hand corner of the paper. All assignments are due at class time on the day specified in the syllabus in the drop box of D2L before class. Late assignments **will not** be accepted.

If you have any concern about meeting the requirements of this course, please see me.

G. Written and oral assignment

There is one major written assignment for this course, the details of which will be explained during the course. This assignment will include writing a 5-6 page paper (1 inch margins, 12-point font, double spaced). Be sure to carefully reference all specific citations used in this report!

H.	<u>Derivation of course grade</u>	
	Activities	10%
	Lesson quizzes	15%
	Written Literature Review	20%
	Midterm exam	20%
	Oral presentation: Group research project	5%
	Power Point: Group research project	15%
	Final exam	15%

I. Other class information

Cell phone policy - please don't use your cell phone during class!
 Email – please note that you are responsible for anything I send you via email.
 Remember, class attendance is very important!

J. Communicating with your instructor via email

I check my email frequently during the day. However, I receive a lot of email and I sometimes delete emails which do not have the subject specified. If you have not received a response to your email within 24 hours, please resend your email. I do not check email routinely on some weekends.

K. Students with special needs

Students with special needs should contact the instructor as early in the semester as possible to make any necessary class/test accommodations.

The contents of this syllabus are as complete and accurate as possible. The instructor reserves the right to make any changes necessary to the syllabus and course material. The instructor will make every effort to inform the students of changes as they occur. It is the responsibility of the student to know what changes have been made in order to successfully complete the requirements of the course. Any in-class announcement, verbal or written, is considered official addendum to this syllabus.

Course Calendar

Date	Topics
Tues, Sept 3 IN CLASS	Welcome and how this course works
Thurs, Sept 5 <i>No Class</i>	Online Lesson 1a: Introduction: Evolution infants and outliers. Online Lesson 1b: Federal budget for research Online Lesson 1c: Exciting research <i>D2L Lesson 1 quiz</i>
Tues, Sept 10 IN CLASS	Online Lesson 2: Steps in conducting research <i>D2L Lesson 2 quiz</i>
Thurs, Sept 12 IN CLASS	Online Lesson 3: Common Research Designs and Evidenced-Based Healthcare <i>D2L Lesson 3 quiz</i>
Tues, Sept 17 <i>No Class</i>	Online Lesson 4: Sampling <i>D2L Lesson 4 quiz</i> Online Lesson 5: Formulation of Research Aims and Hypotheses <i>D2L Activity 1- Research Hypothesis and Method</i>
Thurs, Sept 19 No CLASS	Online Lesson 10: Research ethics and HIPAA <i>D2L Lesson 10 Quiz</i>
Tues, Sept 24 IN CLASS	Before class please review: Online Lesson 6 video: How to critically review research <i>In class: we will discuss the critical review of a paper. I will also introduce D2L Activity 2: Critical review of a research publication</i> Online lesson 7: How to conduct a lit review (no quiz for this). <i>I will also introduce the major writing assignment: The 5 paper lit review</i>
Thurs, Sept 26 IN CLASS	Lesson 8: Bioethics case studies <i>We will discuss these bioethical case studies in class.</i>
Tues, Oct 1 IN CLASS	Lesson 9: Bioethics case studies. <i>We will discuss these bioethical case studies in class. In class: I will also introduce Activity3 "Human subject protection training".</i>
Thurs, Oct 3 IN CLASS	Online lesson 11: Survey Questionnaire Design <i>D2L Lesson 11 Quiz</i> <i>In class: we will do a group activity on survey design</i>
Tues, Oct 8 <i>No class</i>	Online Lesson 12: Hypothesis Testing, Sample size and Power <i>D2L Lesson 12 Quiz</i> <i>Activity 2 due in D2L Dropbox by 11:30pm</i>
Thurs, Oct 10 IN CLASS	Discuss activity 2 critical review of a research paper Review for exam 1
Tues, Oct 15 IN CLASS	<i>Exam 1</i>
Thurs, Oct 17	Review Exam 1. Start the group research project – finding a good

IN CLASS	study question.
Tues, Oct 22 IN CLASS	Group research project - survey questionnaire design
Thurs, Oct 24 IN CLASS	Group research project - survey questionnaire design List of the five papers for your review due in Dropbox
Tues Oct 29 No class	Group research project – final questionnaire completed <i>Activity 3: Research Subject Protection Training must be completed</i>
Thurs, Oct 31 No class	Data collection (with your research group)
Tues, Nov 5 No class	Data collection (with your research group)
Thurs Nov 7 In Computer Lab (to be determined)	Data entry – in computer lab
Tues, Nov 12 In Computer Lab	Data entry / Data cleaning
Thurs, Nov 14 In Computer Lab	Data analysis : Intro to stats software (SPSS) / running descriptive statistics and more data cleaning 5 Paper Lit Reviews Due in Dropbox by 11:59pm
Tues, Nov 19 In Computer Lab	Data analysis: Formatting tables and figures / Analyzing categorical variables
Thurs, Nov 21 No class	Data analysis: Creating variables / Analyzing categorical variables Data analysis: How to present data
Tues, Nov 26 In Computer Lab	Data analysis: finalizing your research presentation
Thurs, Nov 28 In Computer Lab	Thanksgiving Break
Tues, Dec 3 In Computer Lab	Data analysis: finalizing your research presentation
Thurs, Dec 5 In Computer Lab	Data analysis: finalizing your research presentation
Tues, Dec 10 IN CLASS	<i>Student presentations</i>
Thurs, Dec 12 IN CLASS	<i>Student presentations</i>
Thurs Dec 19 No Class	Take Home Final Exam due in dropbox by 11:59pm