

NORTHEASTERN STATE UNIVERSITY
Oklahoma College of Optometry
Tahlequah, OK 74464
Summer 2011

INSTRUCTOR:

Thomas O. Salmon, OD, PhD, FAAO, Professor

Office: OPT BO5

Office Hours: 9-11:00 AM Monday, Tuesday, Wednesday, Thursday or by appointment.

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COURSE TITLE AND NUMBER: OPT 6111 - Research Methodology

CLASS DAYS & TIMES:

Monday, May 23	11:20-12:00	Course introduction
Tuesday, May 24	11:20-12:00	Components of a research paper and poster
Thursday, May 26	9:40-10:20	Choosing a research topic and question
	10:20-11:00	Research design - observational studies
	11:20-12:00	Research design - clinical trials
Thursday, June 2	11:20-12:00	Research design - other kinds of studies
Monday, June 13	8:00-8:40	Introduction to statistics
	8:40-9:20	T-test, ANOVA
	10-12:00	Info resources, Medline, Ovid, etc. (Library 118A)
Thursday, June 16	9:40-10:20	Review & how to do t-tests
Monday, June 20	5:00-5:40 PM	How to actually do the tests in Excel, etc.
	5:40-6:20 PM	Tests of association, correlation, regression, Bland-Altman
Tuesday, June 21	6:00-6:40 PM	Evidence based medicine principles (Library 118A)
Thursday, June 23	6:00-6:40 PM	Advanced search of clinical questions (Library 118A)
Monday, June 27	5:00-5:40 PM	Human subjects and the IRB (Dr. Bekkering)
	5:40-6:20 PM	Chi-squared test. Presenting data in tables and graphs.
Tuesday, June 28	6:00-6:40 PM	Writing the research paper
	6:40-7:20 PM	Course summary, project overview.

PREREQUISITES:

OS III Student in Good Standing

CATALOG DESCRIPTION OF COURSE: Proper use of the different research design strategies and statistical tests; guidelines for critical evaluation of research papers.

COURSE PURPOSE: This course, OPT 6111, is designed to prepare OS III students for

the year-long optometry research project that is included in the following courses: OPT 6122 (fall semester), OPT 6262 (spring semester), OPT 7062 (next year summer), which will ultimately produce a publishable-quality research paper. Subjects we will cover this semester include:

- 1) Components of a research project and research paper
- 2) Information resources online and at the library
- 3) The IRB review process
- 4) Basic statistics
- 5) Writing a research protocol

EXPECTED COURSE OUTCOMES:

- 1) Have an overall understanding of the research projects sequence.
- 2) Select a partner, a research advisor and in collaboration with them, select an interesting topical area for research.
- 3) Understand the basic elements of research design
- 4) Understand the IRB procedures and how to apply for IRB approval
- 5) Be able to use online resources, such as Ovid or Medline to support literature searches
- 6) Know which basic statistical tests to use for the main kinds of eye research
- 7) Be prepared to begin an optometry project

INSTRUCTIONAL MATERIALS:

Purchase a lab notebook, which you will use for this course and your upcoming research project. There are no required textbooks for this course, but refer to the web site for notes and reference material. Suggested references are:

Hulley SB, Cummings SR, Browner WS. Designing Clinical Research, 2nd Edition. Lippincott Williams & Wilkins, 2001.

Kuzma JW, Bohnenblust SE. Basic Statistics for the Health Sciences, 4th Edition, Mayfield Publishing Company, 2001.

Choosing the right statistical test: <http://www.wix.com/optometrywhichtest/which-test>

INSTRUCTIONAL PROCEDURES: Instruction in this course consists of lectures by Dr. Salmon and guest presentations by Ms. Sandra Martin, the optometry reference librarian and Dr. Ernst Bekkering, the NSU IRB Chair. Refer to the class dates and times above for the lecture schedule and topics. Refer to Blackboard for more course information and materials.

ASSIGNMENTS AND DUE DATES: Students will be given assignments designed to exercise basic research procedures. Some assignments planned for the course include

- Start a lab notebook (each student)
- Choose a partner, research topic and advisor
- Do an electronic literature search exercise (each student)
- Review a research article for format and structure (each student)

- Complete exercises in statistics (each student)
- Review a selected article and answer questions on it's research design, etc.
- Other assignments as appropriate.

STUDENT EVALUATION:

The course grade will be based on attendance, which is mandatory, and on completion of assignments. If you cannot attend a lecture, see Dr. Salmon for a substitute assignment, such as writing a paper or creating a video or podcast of the material in the missed. The course grade will be based on the percentage of lecture sessions attended and completion of assignments: 90-100 (A), 80-89 (B), 70-79 (C), <70 (F). Eighteen lectures sessions are scheduled.

Please go to <http://offices.nsuok.edu/academicaffairs/SyllabiInformation.aspx> for required information pertaining to:

1. Academic Misconduct
2. American Disabilities Act Compliance
3. Inclement Weather/Disaster Policy
4. Teach Act
5. Accessibility
6. Release of Confidential Information