

NORTHEASTERN STATE UNIVERSITY
Oklahoma College of Optometry
Tahlequah, OK 74464
Fall Semester, 2008

INSTRUCTOR:

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

Offices: OPT BO5

Office Hours: 9-10:00 AM Monday-Friday, 2-4:00 PM Friday or by appointment.

Telephone: 918-444-4011

Email: salmonto@nsuok.edu

COURSE TITLE AND NUMBER: Opt 6111 - Research Methodology

CLASS DAYS & TIME: 6:30-8:30 PM Tuesday, 1st 8 Weeks

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 is taught simultaneously with Opt 6122, Optometry Project 1. Opt 6111 is designed to prepare OS III students to do the literature review required for Opt 6122 and to give them the basic information necessary to conduct their student project. Subjects covered include: 1) accessing the vision science and related literature; 2) abstracting articles in a way that presents needed information without plagiarizing; 3) Combining data from the literature into an informative and readable review; 4) using Microsoft Excel to enter data, do routine calculations and do basic statistics; 5) appreciate basic statistical processes like elementary statistical design, descriptive statistics, t-tests, simple ANOVA tests and some non-parametric tests; and 6) understanding the role that human experimentation oversight plays in the process of conducting research on human subjects.

EXPECTED COURSE OUTCOMES: Each student is expected to learn to:

1. write a coherent paper synthesizing thoughts and concepts from the biomedical literature without plagiarizing other authors;
2. translate facts and concepts from the literature into an original scholarly study;
3. set-up a study involving human subjects;
4. use a computer effectively to support literature searches and composition;
5. appreciate the meaning of probability levels and statistical significance, especially as they relate to clinical judgement; and
6. be prepared to do an optometry project.

INSTRUCTIONAL MATERIALS: We may use “DePoy E, Gitlin LN. Introduction to Research, 3rd Edition Mosby. 2005.” as supplemental reading to lectures.

INSTRUCTIONAL PROCEDURES: Instruction in this course consists of: 1) lectures; 2) presentations by Ms. Sandra Martin, the reference librarian serving the Oklahoma College of Optometry, Dr. Alexandria Miller, the NSU IRB Chair and Mr. Richard Hoenes, NSU Data analyst; 3) tutorial exercises done in the classroom using multimedia technology and in the Student Computing Lab.

The course meet for eight 2-hour sections designed to study the following:

1. August 19: Course introduction and research project overview
2. August 26: Preparation of the research protocol
3. September 2: Rights and protection for human subject and the IRB approval process. (Guest lecture by Dr. Alexandria Miller)
4. September 9: Library information resources (Guest lecture by Sandra Martin, NSU reference librarian)
5. September 16: Electronic literature search exercise
6. September 23: Introduction to statistics (Guest lecture by Mr. Richard Hoenes, NSU Data analyst)
7. November: Meet with Dr. Salmon to discuss proposed project
8. September 30: Statistics lab exercise using Excel
9. October 7: Review of research methodology and looking ahead

The schedule may be modified as needed to accommodate teaching objectives.

ASSIGNMENTS AND DUE DATES: Students will be given assignments designed to exercise basic research procedures. The specific assignments planned are:

- An electronic literature search exercise
- An Excel statistics exercise
- An list of references
- A research project outline

The electronic literature search exercise will be designed by Sandra Martin (guest lecturer for 9/16) and completed in class on 9/16. The Excel statistics exercise will be designed by Mr. Hoenes and will be completed in class on 9/23.

To prepare for the literature review, students will be required to search the literature and compile a list of references should include the following:

- Textbooks, books, online reviews (MD Consults, Cochrane Reviews, etc.) that provide general background information about the proposed area of research.
- The classic or key research articles in that field of research.
- Articles that provide information about the methods you will probably be using
- More recent reference articles that focus on the research question you will be investigating.

The list of references will be due to the faculty advisor on 10/15/08. The number of references must be equal to the number required for the final literature review. That is, 30 references for a

single-person project, 50 references for a 2-person project, and 70 references for a 3-person project. The reference list must be formatted according the Optometry and Vision Science (OVS) style. Faculty advisors will review the list and grade this assignment based on the following criteria.

- Adequate number of references
- Formatted in the OVS style.
- Enough general background references to provide a general understanding of the underlying principles for this field.
- Inclusion of all the classic, or key research articles that should be included for a paper on the topic.
- A good sample of other articles, including recent articles relevant to the research question.

Once you have identified references, you should begin reading them and preparing a summary of the background science, and specific issues relevant to your research question. This will be the literature review, which will be the final assignment for the companion course, OPT 6122.

The final assignment, a research project outline, will be a 1-2 page overview of your proposed project that follows the example in Table 2 of the Basic Principles of Medical Research lecture (August 26 lecture; available from the course web page, click “General guidance on writing the research protocol.) You should develop this outline in collaboration with you research advisor.

Academic dishonesty includes cheating and plagiarism. This behavior is incompatible with the profession of optometry. Suspected academic dishonesty will be referred to the Student Evaluation Committee and can be grounds for immediate dismissal from the College of Optometry.

STUDENT EVALUATION:

Half of the course grade will be based on attendance, which is mandatory. The rest of the grade will be based on completion of the above assignments.

The grading scale for the exams and the course is 90-100 (A), 80-89 (B), 70-79 (C), <70 (F).

ADA COMPLIANCE:

A member of the class who feels that he/she has a disability and needs special accommodations of any nature should advise the Course Director. He will work with the student and the University's Office of Student Affairs to provide reasonable accommodations to ensure a fair opportunity to perform. Please advise the Course Director of any such disability and the desired accommodations at the first class attended.

INCLEMENT WEATHER/DISASTER POLICY:

The basic premises for the inclement weather policy at Northeastern State University are:

1. Classes are expected to be held if at all possible.
2. Each student is responsible for identifying correct information when weather is questionable.
3. Neither students nor faculty are expected to risk life and limb.

4. Faculty members are obligated to hold classes if the University is not closed unless the faculty member is physically unable to get to the site where the class is held.

Policy: During times of inclement weather, decisions concerning day classes will be made by 6:00 A.M. in order for the media to be notified and for students to receive information before they leave home for the site where the class is held. Decisions concerning night classes will be made by 3:00 P.M. The following media will be notified regarding closing of the campus:

Radio Stations

KRMG 740 AM	Tulsa
KAYI 107 FM	Tulsa
KTLQ 1350 AM	Tahlequah
KEOK 101.7 FM	Tahlequah
KBIX 1490 AM	Muskogee
KMMY 97 FM	Muskogee
KVOO 1170 AM	Tulsa

Television Stations

KJRH Channel 2	Tulsa
KOTV Channel 6	Tulsa
KTUL Channel 8	Tulsa
KFSM Channel 5	Fort Smith
Cable Channel 96	Tahlequah

The automated attendant message at 918-456-5511 will be modified to include information concerning campus operations during inclement weather.