COURSE SYLLABUS

A Second Course in Optimal Experimental Design

Spring Semester, 2009 – Tuesdays 2.30 – 4:00pm in Damen Hall, Room 321
Prerequisites: Some exposure to ODE at the level of Atkinson, A.C., Donev, A.N., and Tobias, R.D. (2007), *Optimum Experimental Designs, with SAS*, Oxford, UK: Oxford University Press.
Text: None; articles and materials will be distributed in class.

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Office Hours: Tuesdays 11.10am – 12.30pm and 2.30 – 3.30pm; Thursdays 11.10am – 12.30pm; and by appointment
Course Web Page: **http://webpages.math.luc.edu/~tobrien/courses/ode/course-homepage.html**

Course Overview

This course continues to explore methods and theory associated with obtaining and verifying efficient experimental designs for Normal linear, generalized linear, Normal nonlinear and generalized nonlinear models. Popular efficient design strategies such as D-, A-, E- and I-optimal designs will be emphasized and optimality will be verified using the General Equivalence Theorem of Kiefer (1959) and its corollaries. Compound design criteria, model discrimination design criteria, and current research in optimal design will also be discussed and illustrated. Students will be required to obtain and verify optimal designs using statistical packages such as R, S-Plus, Minitab and SAS, although no previous knowledge of these statistical packages is needed or assumed. The goal of this course is to engage in research in ODE and prepare and submit a manuscript for publication.

Grading Scheme

Homework	50 %
Participation	20 %
Course Paper	30 %

Final course (letter) grades will be awarded according to the following grading scheme:

	[92.5 , 100] = A	[90.0 , 92.5) = A-
[87.5 , 90.0) = B+	[82.5 , 87.5) = B	[80.0 , 82.5) = B-
[77.5 , 80.0) = C+	[72.5 , 77.5) = C	[70.0 , 72.5) = C-
[67.5 , 70.0) = D+	[60.0 , 67.5) = D	[0.0 , 60.0) = F

Participation

Students are expected to attend all classes and to actively participate in classroom discussion. It is required that students will read the lecture material before class so as to better benefit from the class lecture and discussion.

Computing

Students will analyze data sets using the Minitab and SAS software packages and obtain and verify optimal designs using SAS/IML, although no previous exposure to these packages will be assumed. Students may also use a calculator (such as a TI-84).