

STAT 3480
Statistical Methods for Research Workers II
Winter 2013

Class Time	Tuesday/Thursday 11:30 a.m. – 12:45 p.m.
Location	316 Machray Hall
CRN	20134
Instructor	Dr. Zeny F. Mateo Office: 319 Machray Hall Telephone: 474-6707 E-mail: zeny_mateo@umanitoba.ca
Office Hours:	Monday and Wednesday from 1:00 p.m. - 2:30 p.m. or by appointment
Calendar Description	Analysis of variance, randomized block design, nested and Latin square experiments, analysis of covariance. Not to be held with former STAT 3130 (005.313).
Prerequisite	STAT 3470 (005.347) (C).
Course Website	University of Manitoba "JUMP" course web. Note: Information like announcements and course materials will be posted on the <i>JUMP Portal</i>
Textbook	Applied Linear Statistical Models with Student CD (Fifth Edition) by Kutner, C.J. Nachtsheim, J. Neter, and W. Li. MacGraw- Hill 2004. ISBN 0-07-310874-X Note: A copy of the textbook is available in the Science library. Student Solution Manual is included in compact disk for use by students. The disc also includes all data set files from the text.
Reference	A First Course in the Design of Experiments: A Linear Models Approach by Donald C. Weber and John H. Skillings, CRC Press (2000)
Computer Package	The <i>JMP</i> or <i>SAS</i> statistical software will be used to complete the assignments.
Marking Scheme	Assignments 15% Midterm Test 35% Final Exam 50%

Assignments

There will be five (5) assignments for the whole term. Assignments will be collected at the beginning of class on due date. You are encouraged to discuss assignments with your classmates but the final submission must be written by independently by the students.

Midterm Test and Exam

The tentative date for the **Midterm Test** will be on **February 28, 2013 (Thursday)** during class hour i.e. **11:30 a.m. - 12:45 pm**. There will be no deferred test for any reason. If you miss the Midterm test for valid reason, your Midterm Test weight will be carried over to the final exam. The Final exam covers all the course materials. Only non-programmable calculators are allowed and Selected Formulas and statistical tables will be provided if required during test and exam.

Academic Dishonesty

Although you are certainly encouraged to work on assignments in small groups and help each other, you are expected to produce your own individual assignment. Plagiarism and other forms of cheating are subject to serious academic penalties. We wish to draw your attention to the university policy on academic dishonesty including “plagiarism and cheating” and “examination impersonation” as outlined in *The University of Manitoba Undergraduate Calendar*. More details are available at:

www.umanitoba.ca/science/undergrad/resources/webdisciplinedocuments.html

Voluntary Withdrawal

The voluntary withdrawal deadline is **March 20, 2013** by which time you will have received your marks for Midterm Test and probably three (3) assignments.

Registration Advisory

It is important Note from the Dean of Science:
It is your responsibility to ensure that you are entitled to be registered in this course. This means that you:

- have the appropriate prerequisites, as noted in the calendar description, or have an appropriate permission from the instructor to waive these prerequisites;
- have not previously taken, or are concurrently registered in, this course and another that has been identified as “not to be held” in the course description.

Pandemic Advisory

Should major disruptions to university activities occur as a result of pandemic, the course content, marks breakdown, and other provisions of this document may be adjusted as the circumstances warrant.

Topics to be covered

The following are list of topics that are to be covered in this course. Most of these topics are listed in the textbook. Some sections maybe covered only when time permits.

Design of Experiments

General principles and concepts of experimental designs , Completely randomized designs, randomized complete block design, Nested designs, Latin square, factorial designs, split-plot designs Characteristics, issues, procedures, advantages and disadvantages

Analysis of variance (ANOVA)

ANOVA model formulation and tests

Fixed, random and mixed effects

Single factor, two or more factors

Interaction and no-interaction models

Contrasts and multiple comparison procedures, regression approaches

Diagnostic and remedial measures, residual analysis, data transformation

Analysis of covariance

Single factor and multifactor covariance analyses

Completely randomized designs, randomized complete block issues and practical consequences

Latin Square Design (if time permits)