

# STAT 3480

## Statistical Methods for Research Workers 2 (A01)

### Winter Term 2015

**Class Time:** Tuesday / Thursday 11:30 a.m. - 12:45 p.m.

**Location:** 415 Machray Hall

**CRN:** 20107

**Instructor:** Saman Muthukumarana

**Office:** 327 Machray Hall

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**Office Hours:** Tuesday 1:00 - 2:30 p.m.

Thursday 1:00 - 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 the former STAT 3130 (005.313).

**Prerequisite:** STAT 3470 (005.347) (C).

**Course web site:** Course materials are posted on the [Desire2Learn](#) system.

**Textbook:** *A First Course in the Design of Experiments: A Linear Models Approach* by Donald C. Weber and John H. Skillings, CRC Press (2000) (On reserve in Science Library).

**Computing:** We will be using SAS statistical software throughout the course and familiarity with SAS is a course objective.

**Grading Scheme:** The final grade will be determined as follows.

Term Test 1            20%

Term Test 2            20%

Project                 10%

Final Examination    50%

**Term Tests:** There are two in-class term tests tentatively scheduled on **February 12, 2015** and **March 12, 2015**. There will be no makeup tests for any reason. If you miss an exam due to a legitimate reason, your exam weight will transfer to the final exam.

**The Project:** The project is used to enhance computing skills that you will need in applications. The project can be undertaken with a classmate. At some point, I will contact everyone in the class (as groups) to discuss your project. This project work will include a data analysis using SAS and your final report is due on **April 01, 2015**.

**Final Exam:** The final exam covers all course materials and will be 3 hours in length.

**Class Attendance:** There are no formal assignments for credits in this course. But, sets of problems will be posted for practice and there will be in-class activities that will help you to understand the material. I will also introduce and discuss SAS codes for in-class examples. So I encourage you to attend classes regularly to avoid falling behind. The exams will also resemble in part on problems discussed during classes.

**Course Outline:** The course aims to provide a solid understanding of the concepts of Design and Analysis of Experiments including following areas.

- Introduction: Design and Analysis of Experiments (Chapter 1)
- Completely Randomized Designs (Chapter 7)
- Multiple Comparisons (Chapter 8 and 9)
- Randomized Complete Block Design (Chapter 10)
- Latin Squares Designs (Chapter 12)
- Factorial Experiments with Two Factors (Chapter 13)
- Analysis of Covariance (Chapter 15)
- Random and Mixed Effects Models (Chapter 16)

**Voluntary Withdrawal:** The voluntary withdrawal deadline is **March 19, 2015**.

**Registration Advisory:** 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 with" in the course description.

The registration system may have allowed you to register in this course, but it is your responsibility to check. If you are not entitled to be in this course, you will be withdrawn, or the course may not be used in your degree program. There will be no fee adjustment. This is not appealable. Please be sure to read the course description for this and every course for which you are registered.

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

**Academic Dishonesty:** You are expected to be familiar with what constitutes academic dishonesty and its consequences. Academic dishonesty is a serious offence and can be severe as suspension or expulsion from the University. More details of these terms and related issues are available at: [www.umanitoba.ca/science/undergrad/resources/webdisciplinedocuments.html](http://www.umanitoba.ca/science/undergrad/resources/webdisciplinedocuments.html).