STAT 454/556 A01 - Statistical Computing CRN 22947/22948
TWF 9:30 - 10:20, MAC D111, *University of Victoria, Spring 2017*

Instructor: Dr. Laura Cowen   Office: DTB A446   Phone: 721-6152   Email: `lcowen@uvic.ca`
Office Hours: TBA or by appointment

Description: I designed this upper level course to provide an overview of computer algorithms and methods used in statistical research. Topics that may be covered are: Best programming practices, Numerical Integration, EM algorithm, Bootstrapping, Optimization, Constrained Optimization, MCMC, and Smoothing. Stat 556 students will be required to research a topic of their choice, write a summary of this topic and teach the topic to the class.

Pre-requisites: STAT 261 or STAT 359, MATH 211, and a 65% (C+) or higher in Stat 350 is recommended, or permission of the department.

Textbook: Givens, G. H. and Hoeting, J. A. 2013. Computational Statistics, 2nd edition. Wiley: New Jersey.

References: (on reserve in library).

Weihs, C., Mersmann, O. and Ligges, U. 2014. Foundations of Statistical Algorithms: With References to R Packages. CRC Press: Boca Raton.

Rizzo, M.L. 2007. Statistical Computing with R. Chapman and Hall / CRC The R Series.

Statistical Software and Computer Labs: We will be using R software in this course. You can find R in the computer labs on campus. R can be downloaded from `http://www.r-project.org/`. Feel free to use RStudio, which is a system overlay that neatly organizes your windows. For assignments, you might want to try RMarkdown- an interactive system that allows you to use both LaTeX and R code in one document. There are plenty of tutorials online for these packages.

Evaluation:

Components	454 Weight	556 Weight	Date
Assignments	30%	20%	
Term Test	20%	20%	March 1
Final Exam	50%	50%	
Presentation	0%	10%	

I will deny **extension requests** for exams. If you miss an exam due to illness, accident, or family affliction, you should notify me as soon as possible and provide a written request to be excused with supporting documentation within 1 week of your return to class. In such cases your final exam score rank will be used to assign to you a score on the missed midterm. For example, if you were to score the third-highest mark on the final exam, I will assign you with the third highest mark for the missed midterm. If you miss a midterm and the absence is not excused with documentation,

you will receive a mark of zero. If you submit your assignment late you will receive a penalty of 5%/day.

Mark Disputes: I will accept reasonable arguments regarding marking disputes for 2 weeks after the item has been handed back. After this time, the recorded mark is considered final. I will shred all assignments and term exams that have not been picked up by the final exam.

Counselling Services: If you experience personal difficulties I encourage you to make use of your free access to professional counsellors. They will help you with both personal/family issues as well as academic issues such as anxiety. Go to `www.coun.uvic.ca` for more information.

Department Policies: Please read the department policies at the following webpage: `http://www.uvic.ca/science/math-statistics/undergraduate/course-policies/index.php`