M 514.01 Introduction to Computational Inverse Problems: Mathematical and Statistical Methods

Jonathan M. Bardsley
University of Montana - Missoula, johnathan.bardsley@umontana.edu

Let us know how access to this document benefits you.
Follow this and additional works at: https://scholarworks.umt.edu/syllabi

Recommended Citation
https://scholarworks.umt.edu/syllabi/1743
Intro to Computational Inverse Problems: 
Mathematical and Statistical Methods 
SYLLABUS: MATH 514, Topics in Applied Math

Professor: John Bardsley
Office: Math 308
Phone: 243-5328
Email: bardsleyj@mso.umt.edu
Time and Place: MWF 12:10-lpm, Math 306.
Course Web Page: http://web.math.umt.edu/bardsley/courses/514/514.html
Office Hours: 1:10-2pm, Monday, Tuesday, Wednesday.

LEARNING GOALS: By the end of the course you should:

1. understand what characterizes a typical inverse problem;
2. implement various methods of regularization for solving inverse problems in MATLAB;
3. implement regularization parameter selection methods in MATLAB;
4. understand how Bayes’ Law relates with classical inverse problems;
5. sample from the posterior density function in inverse problems using MATLAB.

ASSESSMENT: Your course grade will be determined mainly by your performance on the homework, and potentially, by your performance on a final project.

* Students may work together on the homework, however each student must write-up his or her own solutions to hand in.

STUDENT CONDUCT: Just be honest, and see the above ‘*’ comment. Details of the Student Conduct Code can be found in the “A to Z Index” on the UM home page.

FOR ANY STUDENT WITH A DISABILITY: If you have a disability that has, or might have, an effect on your performance in this class, please let me know. I will do my best to accommodate you.

Important Dates:

9.15 Last day to change grade option to audit;
   Last day to submit override form;
   Last day to use CyberBear for course changes;
   Last day to withdraw with a partial refund.

10.28 Last day to add or drop courses or change grading options, except audit.

12.10, 8-10:00, Tuesday Final project presentations. This can change.