



Data Analytics

111-2 Mid-term Exam Reminder

Date: April 10, 2023

Duration: 9h10-12h00 (without break)

Location: Xinsheng Lecture Building R40

Seat: randomized arrangement will be announced before the exam

Authorized Objects: calculator (without WiFi accessibility), A4 two-sided cheatsheet × 1

About the Cheatsheet

You are allowed to bring a two-sided A4 paper with any hand-written or printed contents to help you during the exam. Floating pieces/pages are forbidden, and the whole cheatsheet will be confiscated once found.

About the Question Sheet

You must return the question sheet with signed name, or your mid-term will not be corrected.

Reading Materials (reference only, no guarantee to link with the exam)

1. Statistical Inference
Montgomery, D. C., & Runger, G. C. (2014). *Applied Statistics and Probability for Engineers*, Ch8-10.
2. Regression Analysis
Montgomery, D. C., & Runger, G. C. (2014). *Applied Statistics and Probability for Engineers*, Ch11.
Sen, A., & Srivastava, M. (1990). *Regression Analysis: Theory, Methods and Applications*, Ch2-3.
Strang, G. (2006). *Linear Algebra and Its Applications*, Ch3.
3. Multivariate Statistical Inference
Rencher, A. C., & Christensen, W. F. (2012). *Methods of Multivariate Analysis*, Ch2-6.
Johnson, R., & Wichern D. (2014). *Applied Multivariate Statistical Analysis*, Ch2, Ch4.
4. Penalized Regression
Tibshirani, R. (1996). "Regression shrinkage and selection via the lasso," *Journal of the Royal Statistical Society. Series B (Methodological)*, 58(1), 267-288.
Hoerl, A., & Kennard, R. (1970). "Ridge regression: applications to nonorthogonal problems," *Technometrics*, 12(1), 69-82.
Hoerl, A., & Kennard, R. (2000). "Ridge regression: biased estimation for nonorthogonal problems," *Technometrics*, 42(1), 80-86.
5. Principal Component Analysis
Strang, G. (2006). *Linear Algebra and Its Applications*, Ch5.
Rencher, A. C., & Christensen, W. F. (2012). *Methods of Multivariate Analysis*, Ch12.
Johnson, R., & Wichern D. (2014). *Applied Multivariate Statistical Analysis*, Ch8.
6. Factor Analysis
Rencher, A. C., & Christensen, W. F. (2012). *Methods of Multivariate Analysis*, Ch13.
Johnson, R., & Wichern D. (2014). *Applied Multivariate Statistical Analysis*, Ch9.
7. Partial Least Squares Regression
Geladi, P., & Kowalski, B. R. (1986). "Partial least-squares regression: a tutorial," *Analytica Chimica Acta*, 185, 1-17.