

ROBUSTNESS - STAT 547  
2015 / 2016, FALL

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**Course description:** An introduction to the current robust methodology and theory.

**Pre-requisites:** a good stat/math background.

**Textbook:** There is no textbook. Some reference books are listed below

**Instructor:** Ruben Zamar, ESB 3134, ruben@stat.ubc.ca

**Office Hours:** by appointment

**References:**

Maronna, R., Martin, D.R. and Yohai, V.J. (2006). “Robust Statistics”, Wiley, New York

Hampel F.R., Ronchetti E.M., Rousseeuw P.J. and Stahel W.A. (1986). “Robust Statistics: The Approach Based on Influence Functions”. Wiley, New York.

Huber P.J. (1981). Robust Statistics. Wiley, New York.

Rousseeuw, P.J and Leroy, A.M. (1987). “Robust Regression and Outlier Detection”, Wiley, New York

**Tentative list of topics:**

1. Introduction and motivation (1 lecture)
2. Location-dispersion model (3 lectures)
3. Measuring robustness: maxbias, BD, GES, IF (1 lecture)
4. S-estimates - Location / Regression (4 lectures)
5. Multivariate location and scatter (2 lectures)
6. A new robustness model (1 lecture)

**Evaluation:**

Assignments 50%

Final Project 50%