

# Course Outline STA452H1

from the private notebook  
of  
David Brenner  
Sept.3, 2024

**contact info:**

Prof. David Brenner

[david.brenner@utoronto.ca](mailto:david.brenner@utoronto.ca)

office: Thurs 2-3

**lectures:**

Tues 1-2,    Thurs 12-2  
SS2108      SS2108

**ref./text:**

Brenner, D. :

FROM THE PRIVATE NOTE BOOK OF  
Illustrated adventures in very (very) mathematical  
stochastic modelling & statistical inference, 2004-24

Ash, R.B. :

REAL ANALYSIS & PROBABILITY (1972)

Chung, K.L. :

A COURSE IN PROBABILITY THEORY (1968, 1974)

Halmos, P. :

MEASURE THEORY (1950)

**topics:**

*caution:* all contents subject to shuffling, merging, expansion  
& (really serious) modification

- probability, expectation & the LLN
- quantiles, glivenko-cantelli & kolmogorov-smirnov
- stochastic convergence: weak, strong and otherwise
- the general linear model: correlation & regression,  
conditional expectation & bayes' theorem
- the multivariate distributions of common statistical  
practice
- characteristic functions, rotational invariance  
& the cràmer-wold device
- order statistics & permutation invariance

**grading ( $G$ ) :**

Assessment1 ( $A_1$ ) = 50 - due in class Thurs. Oct. 17

Assessment2 ( $A_2$ ) = 50 - due in class Thurs. Nov. 28

$$G = A_1 + A_2$$