

Exam topics in Advanced Applied Statistics

1. Linear models
2. General linear models
3. Generalized linear models
4. Generalized estimating equation
5. Random-effect models, hierarchical modeling
6. Nonlinear models
7. Survival analysis, Cox regression, accelerated failure time models, parametric models
8. Resampling methods, bootstrap
9. Univariate and multivariate meta-analysis

Literature

R scripts and videos:

<https://www.dropbox.com/scl/fo/678lyj9t93pfg6p8v8bbw/AI-ger7Tj3oVddQP9OC9nNc?rlkey=0nbw2m1qucaavy952ltvr5r0k&st=gx0b5ptv&dl=0>

Thulin, M. (2024). *Modern Statistics with R*. Second edition. Chapman & Hall/CRC Press. ISBN 9781032512440.

Judith D. Singer and John B. Willett, *Applied Longitudinal Data Analysis: Modeling Change and Event Occurrence*, 2003, Oxford University Press, ISBN: 0195152964 2. K. J. Grimm, N. Ram & R. Estabrook,

Kevin J. Grimm, *Growth Modeling: Structural Equation and Multilevel Modeling Approaches*, 2017, Oxford University Press, ISBN: 9781462526062

Alan Agresti, 2019, *An Introduction to Categorical Data Analysis*, 3rd Ed., Wiley, ISBN: 9781119405269

Schmid, C.H., Stijnen, T., and White, I. (Eds.). (2020). *Handbook of Meta-Analysis* (1st ed.). Chapman and Hall/CRC. <https://doi.org/10.1201/9781315119403>

Efron, B., and Tibshirani, R.J. (1994). *An Introduction to the Bootstrap* (1st ed.). Chapman and Hall/CRC. <https://doi.org/10.1201/9780429246593>