

POP77082— QUANTITATIVE METHODS II

Module Information	
Module Code	POP77082
Module Title	QUANTITATIVE METHODS II
Department	Political Science
Module Personnel	Jeffrey Ziegler
Academic Year	2026-27
Credit Weighting	10
Semester	Semester 2
Contact Hours	2 hr lecture, 2 hr tutorial once per week

Module Content	
Module Description	This course extends what you did in the previous term by focusing on non-linear model forms for the outcome variable. These are typically called "generalized linear models" (GLMs), although for historical reasons people in the social sciences call them "maximum likelihood models".
Module Learning Aims	The main learning is to adapt the standard linear model that students learn in the first term so that a broader class of outcome variables can be accommodated.
Learning Outcomes	Students will be proficient in regression models that accommodate counts, dichotomous outcomes, bounded variables, and more. There is a strong theoretical basis for the models that we will use.
Indicative Reading / Resources	• Eliason, Scott (1993). Maximum likelihood estimation: Logic and practice. Sage Publications. • Dunteman, George H., and Moon-Ho R. Ho (2006). An introduction to generalized linear models. Sage Publications. • Faraway, Jon (2016). Extending the linear model with R. Chapman & Hall/CRC. • Gill, Jeff, and Michelle Torres (2019). Generalized linear models: A unified approach. Sage Publications. • Greene, William H (2012). Econometric analysis. Pearson Education.

Module Content

	• Long, John S (1997). Regression models for categorical and limited dependent variables. Sage Publications. • Arel-Bundock, Vincent (2026). Model to Meaning - How to Interpret Statistical Models with marginaleffects for R and Python. CRC Press.
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Assessment

Assessment Components	Problem Sets: 50% Mid-Term Exam (arranged locally): 25% Replication project: 25%
Assessment Details	NA

Additional Information

Prerequisites	POP77051
Co-requisites	None
Any other information	NA