

Name of Lecture	Quantitative Behavioral Analysis
Schedule / Venue	Friday 10 : 30-12 : 00 / Lecture Room 203, Education and Research Building of Civil Engineering and Architecture
Category	Multidisciplinary Subject
Credit(s)	2
Course	Natural Disaster Science/ Safety and Security Engineering
Semester	Fall semester
Instructor	Makoto Okumura (IRIDeS)

1. Name of Lecture	Quantitative Behavioral Analysis
2. Purpose / Abstract	To learn theoretical bases, estimation method, application examples of the statistical models frequently used for behavior analysis; Generalized linear model (GLM). Applications to risk related cognition and behavior will be focused. It include PC exercise using R language.
3. Goal	Students will be able to formulate, to estimate on data and to discuss the result with confidence of statistical knowledge. That methods will be applied to analyze human behavior, especially risk-related matters.
4. Contents	<ol style="list-style-type: none"> 1. Basic concepts of statistics and behavior analysis 2. R language software and descriptive statistics 3. Inferential statistics and estimation 4. Inferential statistics and statistical test 5. Linear Regression and descriptive statistics 6. Linear Regression and inferential statistics 7. GLM (Generalized linear models): Introduction 8. GLM: Estimation in R 9. GLM: Statistical tests 10. Applications of GLM 11.12.13. Risk Recognition and related behavior 14,15. Presentation of their own topic application
5. Grading	<p>Presentation (assigned in 1/25 or 1/29) and short report (due 2/1) on your statistic model analysis on your own subject.</p> <p>You select a GLM, which is suitable to the data generation process and observation process of your topic.</p> <p>Your topic should be selected from (1) topic of your</p>

	<p>Master/Doctor study, (2) Data from your original survey or measurement, (3) Get from any published book or materials, (4) Virtual survey data produced through random numbers and hypothesized data generation process.</p> <p>Presentation of 10minute, followed by 5 minutes question and discussion. You may prepare a Powerpoint/Keynote presentation file.</p> <p>Short report of 3-6 pages of A4 sheets includes purpose, selection of GLM, data, estimated result, discussion, and references.</p>
6. Book required / referenced	English material will be distributed.
7. Remarks	