

## APPLIED STATISTICS FOR SOCIAL SCIENCES: SYLLABUS

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| Date                   | Topic                                     | Description   | hours |
|------------------------|---|---|-------|
| 18-Oct-11              | Introduction to Statistics                | Brief introduction to Statistics  | 2     |
| 20-Oct-11<br>25-Oct-11 | Sampling methods                          | Most common Sampling methods: proprieties, advantages and disadvantages   | 4     |
| 27-Oct-11              | Descriptive statistics                    | Relation among variables (Chi <sup>2</sup> , correlation), variability (variance and standard deviation)  | 2     |
| 08-Nov-11              | A basic introduction to estimation theory | Point estimation<br>Interval estimation   | 2     |
| 10-Nov-11              | Hypothesis Testing Theory                 | Null and Alternative hypothesis<br>Type I and type II errors, significance level<br>Hypothesis testing for the differences of means: one sample (test t), two or more independent samples (test F). ANOVA.<br>CHI SQUARE test of association  | 2     |
| 15-Nov-11<br>17-Nov-11 | Linear regression models                  | Functional association among variables<br>Correlation coefficient<br>Simple and Multiple linear regression<br>Measures of model adequacy (i.e. the coefficient of determination)<br>Model specification errors: omitted regressors, irrelevant regressors<br>Practical application of the linear regression model | 4     |
| 22-Nov-11              | Generalized linear models                 | Logit model: specification + examples.<br>Probit model: specification + examples.   | 2     |
| 24-Nov-11              | Multivariate analysis                     | Cluster analysis<br>Factor analysis<br>Correspondence Analysis  | 2     |

### References list

Robert M. Groves, Floyd J. Fowler *Survey Methodology* (2004).  
 Wright, Daniel B. *Understanding statistics: an introduction for the social sciences* (1997)  
 Freedman, David *Statistics* (1991)