1. Target Group
Students of the PhD-Program in Management
This course is part of the core program of the curriculum PhD management, see:
http://wirtschaftswissenschaften.univie.ac.at/fileadmin/user_upload/f_wiwi/Service/Downloadcenter/PhD/Curriculum/Struktur_des_PhD_2_eng.pdf
Students are required to have passed Multivariate Business Statistics successfully.

2. Organizational Issues
- 2 Hours, 10 ECTS credits
- Language of Instruction: English
- Limited number of participants (max. 15)
- Students are required to register via the U:Space-System

3. Course Content and Course Objectives
This course introduces experimental design and the statistical analysis of experimental data. In the first part (Instructor Prof. Kittel), we will discuss the usefulness of experiments for both testing theories and finding stylized facts about human behavior. We will explore different research designs and elaborate on various criteria of validity underlying conclusions about social mechanisms and about their applicability to a wider set of situations. Furthermore, we will look into incentives, in particular induced preferences and social preferences, and causes of noise in the data. Finally, we will address some issues relating to deception in experimentation. A workshop on z-Tree closes the first part of the course. Participants are expected to work out an own experiment during the first part of the course and to present the design at the end of this phase. For further details see: https://ufind.univie.ac.at/de/course.html?lv=390026&semester=2018S

In the second part (Instructor Prof. Wagner), appropriate statistical methods will be presented which are suited for analyzing data collected by means of experimental research projects. We will differentiate according to the level of measurement of the dependent
variable and further between the designs of the experiment (i.e., between-subjects vs. within-subjects). In order to be able to perform statistical analysis on empirical data examples will be provided as to how SPSS implements the techniques presented. Students have to conduct statistical analyses on an individual data sets provided by the instructor and have to provide written reports about the results achieved. Finally, an introduction to simulations methods (focusing on human behavior) will be provided.

After passing this course students should be able to design research projects on their own and to analyze the data generated therefrom.

4. Course Grades

Since not all of the material can be discussed in class, students are expected to prepare for class sessions by studying the relevant literature (see Readings-section). Regular class attendance is expected.

Course grades will be based on various requirements, with the following weights:

- Part Prof. Kittel 50 %
- Exam (Part Prof. Wagner) 40 %
  (Students will have to conduct data analysis in the Computer Lab; open book exam)
- Data analysis projects (Part Prof. Wagner) 10 %

In order to receive your computerized credit report, be sure to have registered in u:space.

Please respect correct scientific conduct when writing research papers and in particular never neglect citation guidelines when using intellectual work of others; see for example:

http://marketing.univie.ac.at/studierende/verhaltenskodex/
https://wirtschaftswissenschaften.univie.ac.at/service/studienservicecenter/schriftliche-arbeiten/dissertation/#c49395

5. Readings

Copies of the Power Point presentations will be made available on the „MOODLE“ platform.

**Part Prof. Wagner**


Further Readings

6. Time Schedule (Part Prof. Wagner)

<table>
<thead>
<tr>
<th>Date (*)</th>
<th>(Tentative) Content</th>
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</thead>
<tbody>
<tr>
<td>19.3.</td>
<td>Basic terminology: experimental design and statistics&lt;br&gt;Discrete dependent variables: cross tabulations, Chi-square tests, log-linear models, logistic regression, Correspondence analysis, McNemar’s change test&lt;br&gt;TF1 10, 16, TF2 1, 2&lt;br&gt;BEPW 5, 6, 15, BEW 7, EWV</td>
</tr>
<tr>
<td>9.4.</td>
<td>Ordinal dependent variables: Mann-Whitney U Test, Wilcoxon T Test, Kruskal-Wallis H Test, Friedman Test&lt;br&gt;TF1 10, 16</td>
</tr>
<tr>
<td>16.4.</td>
<td>Basic terminology: t-Test, effect sizes, interaction effects, contrasts, post-hoc tests&lt;br&gt;Continuous dependent variable, independent samples, covariates: ANOVA (one way, n-ways), ANCOVA&lt;br&gt;TF2 3-5, BEPW 3, EWRP</td>
</tr>
<tr>
<td>23.4.</td>
<td>Continuous dependent variable, dependent samples/repeated measures, covariates: ANOVA (n-ways), ANCOVA; multiple ANOVA&lt;br&gt;TF2 6, 7</td>
</tr>
<tr>
<td>30.4.</td>
<td>Some introduction in simulation for analyzing human behavior&lt;br&gt;HHL 15, WG, WRG</td>
</tr>
<tr>
<td>7.5.</td>
<td>Exam (Part Prof. Wagner), <strong>Computer Lab 1</strong></td>
</tr>
</tbody>
</table>

(*) One of these target dates is supposed to be a fallback session, in case one of the targeted sessions needs to be cancelled.
## Outline Part Experimental Design
(Part Kittel)

### 09.03.2018

<table>
<thead>
<tr>
<th>Time</th>
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<tbody>
<tr>
<td>2 10:15-12:15</td>
<td>Experimental Session</td>
<td></td>
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### 13.04.2018

<table>
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<th>References</th>
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</thead>
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5 10:45-12:15

**Experimental Design and Validity**


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20.04.2018

6 9:00-10:30

**Aims of Inquiry and Human Subjects**


**Further Reading**


Examination

a) Presentation and discussion of specific topic in seminar session. (50%)
b) End-of-term paper describing an experimental design in the field of research of the dissertation. (50%)