SYLLABUS

E-mail: littvayl@ceu.edu
Mobile: +36 70 538-3683 (only call between 11am and 11pm Central European Time)
Class: Tuesdays 17:20 – 19:00 @ hopefully the 004 Smart Classroom
Office Hours: Tuesdays at 13:30 to 15:00 and Wednesdays at 15:15 to 16:45 and/or by appointment. (Appointment is always required 48 hours before meeting or you can’t expect me to be there. Email me, call me, Tweet, etc.)

Summary

The course is designed to provide scholars with a basic understanding of multilevel (a.k.a. hierarchical or mixed) models. Special attention is given to the translation of theoretical expectations into statistical models, the interpretation of results in multilevel analyses and the general use and misuse of multilevel models in the social sciences. While the course is predominantly designed to give you the knowledge of multilevel regression modeling, it does also arm you with the basic tools to run multilevel models in R. (Please bring your own laptop.) Applications will include models with continuous and limited dependent variables in hierarchical, longitudinal and cross-classified nesting situations and, if time allows, multilevel structural models. The goal of the course is to offer a basic introduction and the foundation for students to start using and critically assessing multilevel models and also have the ability to independently discover and master advanced multilevel statistical topics.

Upon completion the students will have a basic conceptual understanding of multilevel modeling and its statistical foundations. Students will be able to critically assess the appropriateness of such techniques in their own and other people’s research and conduct multilevel modeling themselves to the highest academic standards.

Pre-requisites for the Class

The class is open to both MA and PhD students (of any CEU department) as long as their prior statistical training is equivalent to the materials covered in the Fall term MA Quantitative Methods course and the Winter term MA Multivariate Statistics class of the political science department or, in 2015, both the mandatory and optional applied statistics MA classes. (Equivalence can only be assessed by the instructor of this course. Please send appropriate details for assessment.) Simultaneous enrollment in Multivariate Statistics and this class is sufficient but I cannot guarantee it will be an easy ride. MA students may need permission from the director of the PhD program to enroll in the class. Assuming the above criteria are met, I wholeheartedly endorse their enrollment into the course. (This is because the course at hand will only be offered once every 3 or 4 years. Students will not have any opportunity to take this course again even if they enter our PhD program.) If you are an MA student, understand this class is taught at the PhD level. Make sure you are ready for this before you decide to sign up.

Auditors will have to do all assigned work (including the presentation) and will have to perform on all criteria to acceptable level to receive an adequate passing mark for the class. Auditors will not have to write a final paper. No dropping of the class or changes from grade to audit will be allowed after the close of registration period. I will only consider requests to change from audit to grade.

Learning Outcomes

The course covers both inductive and deductive form of models. It is designed to advance scholar’s ability to comprehend and critique articles using multilevel models and to apply these approaches in research. Throughout the course students’ use computer software (R) for conducting statistical multilevel analysis. Understanding and application of the aforementioned techniques are applied
autonomously in a creative way. The course advances the scholar’s ability to contribute to the
development of political science in their home countries by applying the learned methods to analysis
of their home countries (or any other place for that matter) by acquiring cutting-edge approaches
and methods of multilevel modeling. Since multilevel data structures are not localized to political
science, the scholars emerged in the course will acquire the ability to expand both their own and
their field’s horizons by extending the their inferential understanding beyond the boundaries of the
discipline. Statistical inference is universal in all of empirical sciences and therefore this course
will certainly expand the scholar’s view into an interdisciplinary vision of the world. The course
will expand the scholar’s ability to design, implement and write up a good quality research in a
thorough, rigorous and consistent manner. Methodologies, such as multilevel models covered by
the course advance the scholar’s ability even going beyond writing research proposals and formulating
research questions. The course will help students conduct actual empirical research. The final paper
(article) for the course is designed to advance the student in mastery of academic writing style and
argumentation in English: ability to use English grammar, vocabulary and style appropriate for
written academic products and ability to construct academic arguments. And in this final paper
(and also in other components of the course) we will use graphs and other visual communication
of results. In writing and also sharing the findings of the final paper students will advance their
ability to synthesize information, determine a focus point, discern the main line of argumentation
and orally present these. Their ability to generate logical, plausible and persuasive arguments,
connect, compare and contrast, ability to identify logical relations and mistakes of arguments,
ability to make appropriate analytical distinctions, (and etc.) will be advanced through the course.
Through this both students’ higher order thinking (such as to seeing patterns and generalizing from
facts) reasoned judgment will grow.

**Evaluation of Student Work**

- **Participation (engagement in class):** 10%
- **Preparedness (to make sure you read for class):** 15%
- **Presentation of Design and Analysis (March 29, 20:00):** 25%
- **Publishable Article (not required for auditors):** 50%

On a 100 point scale, the grading would be as follows:

- **A** 94.00 – 100
- **A-** 87.00 – 93.99
- **B+** 80.00 – 86.99
- **B** 73.00 – 79.99
- **B-** 66.00 – 72.99
- **C+** 59.00 – 65.99

It is an absolute requirement that you come to class, you stay engaged in class and that you come
to class prepared. If you will miss a class or come late for any reason, make sure I know about
it **before** the class. (Even if it is a few minutes before class.) These two components make up a
quarter of your grade. Additionally everyone will have to present their individual project (design
and analysis) at the meeting outside of class in the presentations evening outside of class (March
29, 20:00)

Final paper will have to include original research using one of the methodologies covered in class.
It has to be of publishable quality adhering to the submission guidelines of one peer reviewed
ISI ranked journal selected by the student. The sophistication of the methodology used needs to
be true to a PhD level statistical methods class. Topic needs not be political science but has to
be publishable in a peer reviewed ISI ranked scientific journal. The manuscript will have to be
appropriately anonymized if this is required by the journal only identifying you via the file name.
If journal asks for multiple files, ignore this request and tag additional figures and tables on to
the end of the manuscript. Journals generally ask for papers no longer than 4000-8000 words. For
specific maximum paper length, please check the journal’s guidelines.
Important Notice

Complete academic honesty is expected of everyone. Failure to comply with this requirement will result in automatic failure in this course (and subsequently in the program) and additional disciplinary action on higher levels. This is an American university and American standards will be applied. For more information about these standards see: http://en.wikipedia.org/wiki/Academic_dishonesty (READ VERY CAREFULLY!)

All assignments are to be done individually. You can talk about how to do it, but none of the actual work can be done in a group. Any evidence to the contrary will be investigated.

REGULAR CLASS SCHEDULE

<table>
<thead>
<tr>
<th>Week</th>
<th>Topic</th>
<th>Required Readings*</th>
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<tbody>
<tr>
<td>Jan 12</td>
<td>Intro to Fixed Effects</td>
<td>Brambor et al (2005)</td>
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<tr>
<td>Feb 2</td>
<td>Intro to MLM in R</td>
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<tr>
<td>Feb 16</td>
<td>Dealing with Time</td>
<td>Singer and Willett (2003) Ch1-7</td>
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<td>Feb 23</td>
<td>Lab Session</td>
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<tr>
<td>March 1</td>
<td>Class Canceled</td>
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<tr>
<td>March 8</td>
<td>Class Canceled</td>
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<td>March 15</td>
<td>National Holiday</td>
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<tr>
<td>March 22</td>
<td>Cross-classification</td>
<td>Fielding and Goldstein (2006)</td>
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<tr>
<td>March 29</td>
<td>Advanced Topics</td>
<td>Something I am writing</td>
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<tr>
<td></td>
<td>Presentations at 20:00</td>
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Books


Articles


Reference Texts
