



Project Consulting Course

SURV 642

6 credits/12 ECTS

Spring 2020

Instructor

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Short Course Description

In this course, students will apply the core skills that they learned in the IPSDS program to address real-world problems. The course will provide experience with the steps involved in carrying out a data consulting project, such as discussing the problems to solve with a client, data handling, and communicating work in both written and oral forms. The project is completed in teams (3-4 students per team).

Course and Learning Objectives

By the end of the course, students will...

- be able to apply skills and concepts learned throughout the program to solve a real-world problem for a given client,
- be able to successfully manage a project in a timely manner,
- be able to collaborate with team members as well as data clients,
- be able to effectively communicate results in both written and oral forms.

Prerequisites

- Successful completion of the course “Fundamentals of Survey and Data Science”
- Experience with descriptive statistics, inferential statistics and linear modeling
- Familiarity with R or Python (you should be able to clean and manipulate data using one of these programming languages)

Class Structure and Course Concept

This is a flipped online course in which students will form groups to collaboratively work on problems involving data presented to them by outside consultants. Students will work in teams to scope a problem, analyze data provided to them, distribute work among team members, and combine their results for a joint report and presentation.



The first part of the course emphasizes on individual work. Students are expected to watch video-recorded lectures, read the required literature for each unit, and attend online discussion meetings with the instructor. In some meetings, students will meet with clients. The second part of the course will emphasize project-based work involving data analysis. Student will collaborate with their group members via online tools (e.g., Zoom meetings) to complete their projects. They will provide periodic progress updates about their group projects and present their work orally and in writing. Just like in an on-site course, homework will be assigned and graded and there will be a final report at the end of the course.

Although this is an online course where students have more freedom in when they engage with the course materials, students are expected to spend the same amount of time overall on all activities in the course – including preparatory activities (readings, studying), in-class-activities (watching videos, participating in online meetings), and follow-up activities (working on assignments, projects and final reports) – as in an on-site course. As a rule of thumb, for each credit offered by a course, students can expect to spend one hour per week on in-class activities and three hours per week on out-of-class activities over the span of a full 12-week term. This is a 6-credit course that runs for 14 weeks. Hence, the average workload is about 18 hours per week.

Mandatory Weekly Online Meetings

Monday, noon ET/06:00 PM CET

Meetings will be held online through Zoom. Follow the link to the meeting sessions on the course website on <https://www.elms.umd.edu/>. If video participation via Internet is not possible, arrangements can be made for students to dial in and join the meetings via telephone.

In preparation for the weekly online meetings, students are expected to watch the lecture videos and read the assigned literature before the start of the meeting. In addition, students are encouraged to post questions about the materials covered in the videos and readings of the week to the instructor in the forum before the meetings (deadline for posting questions is Sunday, noon ET/18:00 CET).

In addition to the normal weekly meetings with the lecturer, there are additional individual meetings in which the students work with the data/on the project as a self-organized project team without the lecturer (weeks 4-6, 9-11, 14). In some selected meetings (week 3, 12 and 13) the client is present at the meetings.

Students have the opportunity to use the Zoom meeting room set up for this course to connect with peers outside the scheduled weekly online meetings (e.g., for study groups). Students are encouraged to post the times that they will be using the room to the course website forum to avoid scheduling conflicts. Students are not required



to use Zoom and can of course use other online meeting platforms such as Google Hangout or Skype.

Grading

Grading will be based on:

- participation in online meetings (10%)
- first meeting with clients and results protocol (20%)
- final presentation (35%)
- final report (35%)

The projects will always include a larger data analysis that should answer several research questions. The answers to these research questions will be presented in detail by the project teams in the final presentation and the final report.

The feedback of the client will be taken into account when grading the presentation and the report.

Dates of when assignment will be due are indicated in the syllabus. Extensions will be granted sparingly and are at the instructor's discretion.

Technical Equipment Needs

The learning experience in this course will mainly rely on the online interaction between students and the instructor during the weekly online meetings. Therefore we encourage all students in this course to use a web camera and a headset. Decent quality headsets and web cams are available for less than \$20 each. We ask students to refrain from using built-in web cams and speakers on their desktops or laptops. We know from our experience in previous online courses that this will reduce the quality of video and audio transmission and therefore will decrease the overall learning experience for all students in the course. In addition, we suggest that students use a wire connection (LAN), if available, when connecting to the online meetings. Wireless connections (WLAN) are usually less stable and might be dropped.

Long Course Description

This course focuses on the process of finding and extracting useful information and insights from data using survey and data science methods. At the beginning of the course, students will be introduced to a number of clients (organizations or companies) who will present particular problems/research questions that they would like to address using data. Students will be split into groups and will have an opportunity to choose a problem to work on. The real-world context of the course will help students to learn to balance high-quality work, effective collaboration, and planning as well as time management. While there will be some lectures and reading



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material, the main task for the course will involve applied project work in close interaction with other students and the course instructor. By the middle of the course, students will be asked to make a 5-minute online presentation reporting on their progress. At the end of the course, students are expected to present their results and submit a written report. In addition to participating in regular online meetings attended by all of the students, teams are expected to meet on a regular basis (Zoom virtual rooms will be provided).

Readings

Primary readings will be from the following volumes:

General Introduction:

Ron S. Kenett (2015): Statistics: A Life Cycle View. Quality Engineering, 27:111-121, 2015 <https://dx.doi.org/10.2139/ssrn.2315556>

Communication skills (required):

Janice Derr (2000): Statistical Consulting. A Guide to Effective Communication. Duxbury press.

Academic Conduct

Clear definitions of the forms of academic misconduct, including cheating and plagiarism, as well as information about disciplinary sanctions for academic misconduct may be found at

<https://www.president.umd.edu/sites/president.umd.edu/files/documents/policies/III-100A.pdf> (University of Maryland) and

<https://www.uni-mannheim.de/en/research/good-research-practice/> (University of Mannheim).

Knowledge of these rules is the responsibility of the student and ignorance of them does not excuse misconduct. The student is expected to be familiar with these guidelines before submitting any written work or taking any exams in this course. Lack of familiarity with these rules in no way constitutes an excuse for acts of misconduct. Charges of plagiarism and other forms of academic misconduct will be dealt with very seriously and may result in oral or written reprimands, a lower or failing grade on the assignment, a lower or failing grade for the course, suspension, and/or, in some cases, expulsion from the university.



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Accommodations for Students with Disabilities

In order to receive services, students at the University of Maryland must contact the Accessibility & Disability Service (ADS) office to register in person for services. Please call the office to set up an appointment to register with an ADS counselor. Contact the ADS office at 301.314.7682; <https://www.counseling.umd.edu/ads/>.

Students at the University of Mannheim should contact the Commissioner and Counsellor for Disabled Students and Students with Chronic Illnesses at http://www.uni-mannheim.de/studienbueros/english/counselling/disabled_persons_and_persons_with_chronic_illnesses/.

Course Evaluation

In an effort to improve the learning experience for students in our online courses, students will be invited to participate in an online course evaluation at the end of the course (in addition to the standard university evaluation survey). Participation is entirely voluntary and highly appreciated.

Class Schedule

Please note that assignments and dates are subject to change. Information (e.g., articles and assignments) posted to the course website supersedes the information noted here.

Week 1: General introduction

Online meeting (Helmut Küchenhoff): Monday, January 13, 2020, Monday, noon EST/06:00 PM CET

Video lecture (Helmut Küchenhoff): Monday, January 6, 2020

Readings:

Ron S. Kenett (2015): Statistics: A Life Cycle View. Quality Engineering, 27:111-121, 2015

<https://dx.doi.org/10.2139/ssrn.2315556>

Week 2: Cooperation with clients/Assigning projects

Online meeting (Helmut Küchenhoff): Monday, January 20, 2020, noon EST/06:00 PM CET

Video lecture (Helmut Küchenhoff): Monday, January 13, 2020

Readings:

Derr (2000). Chapter 1 and 4

Week 3: Meeting with clients



Individual online meetings with Helmut Küchenhoff and clients week January 27 to 31, 2020

Result protocol of the meeting with the client due: Friday, February 7, 2020, noon ET/06:00 PM CET (upload to the learning platform Canvas)

Readings:

Derr (2000). Chapter 2 and 3

Week 4: Teams work on projects

No online meeting

Week 5: Teams work on projects

Informal individual meetings of the groups with Helmut Küchenhoff

Week 6: Teams work on projects

No online meeting

Week 7: Presentations of project progress/Feedback

Online meeting (Stefan Bender, Network groups): Monday, February 24, 2020, noon – 01:00 EST/06:00-07:00 PM CET

30 minutes per project: 15 minutes presentation + 15 minutes discussion

Project progress presentation due: Monday, February 24, 2020, noon ET/06:00 PM CET (upload to the learning platform Canvas)

Week 8: Presentations of project progress/Feedback

Online meeting (Helmut Küchenhoff, Digital Traces and Tourism Project): Monday, March 2, 2020, noon – 01:00 EST/06:00-07:00 PM CET

30 minutes per project: 15 minutes presentation + 15 minutes discussion

Project progress presentation due: Monday, March 2, 2020, noon ET/06:00 PM CET (upload to the learning platform Canvas)

Daylight savings time starts in the US on March 8, 2020, and clocks are turned forward 1 hour. Daylight savings time starts in Europe on March 29, 2020.

Therefore, look carefully at the times of meetings and deadlines!

Week 9: Communicating results: effective presentation and report

Online meeting (Helmut Küchenhoff): Monday, March 9, 2020, 01:00 PM EDT/06:00 PM CET

Video lecture (Helmut Küchenhoff): available online Monday, March 2, 2020



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Readings:

Derr (2000). Chapter 7

Week 10: Teams work on projects

No online meeting

Week 11: Teams work on projects

Online meeting (Helmut Küchenhoff): Monday, March 23, 2020, **01:00 EDT/06:00 PM CET**

General discussion/questions/feedback on projects

Daylight savings time starts in the US on March 8, 2020, and clocks are turned forward 1 hour. Daylight savings time starts in Europe on March 29, 2020. Therefore, look carefully at the times of meetings and deadlines!

Week 12: Final presentations (part 1)

Online meeting for final presentation of project Digital traces (Instructors and client): Monday, March 30, 2020, noon EDT/06:00 PM CEST
60 minutes per project: 45 minutes presentation + 15 minutes discussion

Online meeting for final presentation of project Tourism (Instructors and client): Tuesday, March 31, 2020, noon EDT/06:00 PM CEST
60 minutes per project: 45 minutes presentation + 15 minutes discussion

Final presentation due: March 30, 2020, noon EDT/06:00 PM CEST (*upload to the learning platform Canvas*)

Week 13: Final presentations (part 2)

Online meeting for final presentation of project Analysis of network data (Instructors and client): Monday, April 6, 2020, noon EDT/06:00 PM CEST
60 minutes per project: 45 minutes presentation + 15 minutes discussion

Online meeting for final presentation of project Graphical representation of network data (Instructors and client): Monday, April 7, 2020, noon EDT/06:00 PM CEST
60 minutes per project: 45 minutes presentation + 15 minutes discussion

Final presentation due: Monday, April 6, 2020, noon ET/06:00 PM CET (*upload to the learning platform Canvas*)



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1 hour presentation (45 min. presentation + 15 discussion) for each team

Week 14: Teams work on projects

No online meeting

Final Report

Due: Monday, April 27, 2020, noon EDT/06:00 PM CEST

Note: Student access to the course website will be revoked one month after the final exam.