University of California, Davis
Institute of Transportation Studies

TTP 289A-003
CRN: 51526
Travel Survey Workshop
Fall 2020
(Tu/Th, 2:10-4:00pm, 129 Wellman*)

SYLLABUS
Version 1, last updated on June 30, 2020

**Due to the current conditions during the COVID-19 pandemic, the course might be taught virtually through the online platform provided by UC Davis. Final details will be communicated before the beginning of the 2020 Fall Quarter.*

Instructor:

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Office Hours:

By appointment

Course Details

Number of Units: 4
Grading: Letter graded

Formal prerequisite: Undergrad-level probability & statistics. **Informal prerequisites:** Having had a course in regional travel demand forecasting is also helpful but not essential.

Course Description: The course will cover travel survey and data collection methods commonly used in transportation planning and travel demand modeling, including travel and activity diaries, attitudinal, panel, computer, stated-response surveys. Discussion of sampling, recruitment methods, weighting and representativeness, experimental design and survey design issues, passively-collected (e.g. cell-phone) data and GPS-tracking data collection apps. Analysis methods, including factor, discriminant, cluster and latent class analysis.

Textbooks:

- Stopher, Peter (2012) Collecting, Managing, and Assessing Data Using Sample Surveys. Cambridge, UK: Cambridge University Press.
- Dillman, Don A., Jolene D. Smyth, and Leah Melani Christian (2009) Internet, Mail, and Mixed-Mode Surveys: The Tailored Design Method, 3rd ed. Hoboken, New Jersey: John Wiley and Sons.
- Class handouts and supplemental readings as assigned.

Grading and Assignments:

Grading will be based on five assignments. Each assignment will count 20% of the grade. Teaming with one other person is allowed on the HW, at your choice, with the only exception of the last assignment that needs to be carried out individually. You may team or not team for HW1, HW2, HW3 and HW4, choose your teammate (if any), and you are free to change the team arrangement from one assignment to the next. Teamed assignments will receive a single grade for the team, and will be graded to the same standards as un-teamed assignments. Each member of the team is expected to engage thoroughly in, and to make substantive contributions to, all aspects of the assignment.

Teams of three members are usually not allowed (unless under very special circumstances) due to the risk of diluting the workload too much. This prevents risks of reduced understanding of the material and pedagogical value of the assignments, as well as students' eventual disappointment about the unequal contributions by the team members.

Honor Code:

- Plagiarism is defined by Webster's Dictionary (http://www.merriam-webster.com/dictionary/plagiarism) as "the act of using another person's words or ideas without giving credit to that person." If caught plagiarizing, you will be dealt with according to the UC Davis Code of Academic Conduct (http://sja.ucdavis.edu/files/cac.pdf).
- You may discuss the assignment with other students in the class. However, each student or team must submit her/his/their own homework solutions, written in her/his/their own words. The content of any assignment turned in should be only that of the person (people) whose name(s) is (are) on the assignment. Copying or borrowing from another person's solution is a violation of the UC Davis Code of Academic Conduct, and will be dealt with accordingly. Similarly, copying or borrowing from the lecture notes or from any other source without proper attribution is a violation.
- Unauthorized use of previous course materials created by me or other colleagues at UC Davis, such as graded homework assignments, other than what explicitly allowed by me or my delegate(s), is prohibited in this course. Therefore, unauthorized use of such materials is a violation of the UC Davis Academic Honor Code, and will be dealt with accordingly.
- When in doubt, don't assume or rationalize -- ask! The instructor is here to answer your questions.

- For any questions involving these or any other Code of Academic Conduct issues, please consult me or visit http://sja.ucdavis.edu/

UC Davis Student Disability Center:

The University of California, Davis is committed to ensuring equal educational opportunities for students with disabilities. UC Davis has policies regarding disability accommodation, which are administered through the Student Disability Center (https://sdc.ucdavis.edu/).

Students are responsible for contacting each of their instructors in advance to ensure appropriate arrangements are made for requested accommodations. Please visit the Center website for more information.

Course Outline:

The following content will be covered in the course. Eventual changes in the course outline and lecture schedule might be introduced depending on the student preparation (see, in particular, the informal prerequisites of the class), and any additional needs that might arise.

- Introduction: Course overview, scientific method, transportation data, type of survey data
- Human subjects and IRB review: The course will require students to take CITI online certification for conducting research with human subject data
- Activity and travel diaries: Origin-destination travel data, regional household travel surveys, National Household Travel Survey (NHTS), other activity and travel diaries
- Survey administration and recruitment methods
- Response rates, errors, sampling, non-response
- Attitudinal survey design
- Quasi-experimental design principles
- Panel surveys
- Stated-response surveys and experimental design
- Introduction to data analysis of survey data, factor analysis, deterministic cluster analysis, latent-class cluster analysis
- Data collection with GPS-based smartphone apps
- Passive data collection methods: cell phone data, advantages and limitations of various data sources
- Ethics in survey research
- Guest lectures (qualitative methods, other topics)

Computer Usage and Software Packages:

The course involves the use of various technological solutions and software packages for travel survey design, data collection and data analysis. The course will include homework and practice sessions dealing with the design of travel surveys using the Qualtrics online survey platform, the collection of data with a GPS-based smartphone app, the access to passively-collected transportation data, and the analysis of datasets using multivariate statistical software such as R, SPSS, or SAS.

As part of one homework assignment, students will install the rMove smartphone app developed by RSG Inc. to familiarize with the use of GPS-based methods of data collection, and will analyze the data collected with the app as part of the homework assignment.

As part of another homework assignment, students will get access to passively-collected transportation data from Streetlight Inc. through an academic license agreement. Students will familiarize themselves with the platform and the data, and will analyze them as part of the homework assignment. Under the terms of the Streetlight academic agreement, any other use of the data accessed as part of this course, in particular for commercial or professional use, is prohibited, unless specifically allowed in writing by the provider of the data.