Syllabus

DTSC 1301/1302: Data and Society (section 02)

Semester: Fall 2024

Days and Time: Mondays, Wednesdays, Fridays, 10:10 pm - 12:05 pm

Location: Colvard South, Room 1040

Course Duration: Aug 19, 2024 - Oct 8, 2024

Course Credits: 3

Instructional Team

INSTRUCTORS

Instructor

Marco Scipioni, PhD

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Office Hours: Mondays/Tuesdays, 1:00-2:00 pm

Office Location: 1028M, Colvard Building *South* (School of Data Science suite)

Instructor

Name: Ilieva Ageenko, PhD

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Office Hours: Mondays, 1:00-2:30 pm

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TEACHING ASSISTANTS

Teaching Assistant (Data Science)

Name: Hiranya Vaishnavi Bandi

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Teaching Assistant (Data Science)

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Teaching Assistant (Data Ethics)

Name: Marcela Aguilera

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Location: TBD

Course Description

An introduction to data acquisition, models, and analytic methods for interpreting data and developing hypotheses in the context of the interdisciplinary field of Critical Data Studies. Critical Data Studies seeks to track, analyze, and transform the use of large data sets across a variety of domains, including the health sciences, security and surveillance technologies, social media, marketing and business, government and public policy, and other uses of aggregative and algorithmic data science. With resources from Critical Data Studies, students learn how to use statistical methods/tools and scripting programming languages to explore social problems and the ethical implications of collecting and using tabular data.

Course co-requisites. DTSC 1302 (https://catalog.charlotte.edu/content.php?filter%5B27%5D=-1&filter%5B29%5D=&filter%5Bkeyword%5D=DTSC+1301&filter%5B32%5D=1&filter%5Bcpage%5D=1&cur_cat_oid=27&expand=&navoid=2571&search_database=Filter#tt8448) ; STAT 1220 (https://catalog.charlotte.edu/content.php?filter%5B27%5D=-1&filter%5B29%5D=&filter%5Bkeyword%5D=DTSC+1301&filter%5B32%5D=1&filter%5Bcpage%5D=1&cur_cat_oid=27&expand=&navoid=2571&search_database=Filter#tt2426) , STAT 1221 (https://catalog.charlotte.edu/content.php?filter%5B27%5D=-1&filter%5B29%5D=&filter%5Bkeyword%5D=DTSC+1301&filter%5B32%5D=1&filter%5Bcpage%5D=1&cur_cat_oid=27&expand=&navoid=2571&search_database=Filter#tt945) , STAT 1222 (https://catalog.charlotte.edu/content.php?filter%5B27%5D=-1&filter%5B29%5D=&filter%5Bkeyword%5D=DTSC+1301&filter%5B32%5D=1&filter%5Bcpage%5D=1&cur_cat_oid=27&expand=&navoid=2571&search_database=Filter#tt5631)

Course Objectives

Upon successful completion of DTSC 1301 and DTSC 1302, students will be able to:

Data Science Research Skills

- Develop hypotheses that anticipate associations in data based on a thorough literature
- Evaluate the unique position of citizens in social phenomena that occur in the US and the world
- Understand and linking social, economic, and political concepts to measurement, data collection, and analysis

The Ethics of Data Science

- Evaluate ethical and policy-based debates within data
- Apply ethical principles/values/frameworks within data-driven organizational
- Understand and present the positions on multiple sides of an ethical issue, including the reasons, principles, and values offered in ethical arguments.
- Understand and assess the ethical stakes of conducting research on or about human subjects
- Critique arguments that involve ethical issues in data

Data, Computing, Statistics, and Probability

- Collect and clean data obtained from various datasets
- Appropriately deal with missing values
- Use a statistical programming language to perform data analysis
- Create statistical models using the concepts of correlation, linear regression, least squares, residuals
- Test hypotheses and identify statistically significant results

Course Materials

- Students must have access to a laptop or desktop
  - Linux, Windows 10, or macOS operating system preferred. ChromeOS will suffice but has
- All software required for the course is free and open source.
- All readings for the course will either be open source or available for free through the University library.

Course Strategy

Teaching methods are grounded in an interdisciplinary studio style approach to learning in which students are presented with cross-disciplinary data science challenges that guide the mini lectures, in-class activities, and group data-driven projects. Students are expected to participate in discussions, problem solving, critical thinking exercises, analysis of case studies, collaboration, peer-teaching, and design and critique sessions. All students are expected to contribute in a meaningful way to team efforts.

Course Grading

DTSC 1301 is a PASS/FALL course which means that students, at the completion of the course, will receive either a passing grade (P) or a failing grade (F) based on the percentage of the final grade that is worth 100%.

Weighted Grading Scheme

Attendance, data science assignments, ethics assignments, , and the midterm exam are assigned % weights out of a total of 100% (see table below).

Task	% of Final Grade
Attendance	10%
In-class activities	10%
Data Science Assignments	25%
Data Ethics Assignments	25%
Final Exam	30%

Earning 60% or higher = PASSING the course.

Earning 59 % or less = FAILING the course (see table below).

On the other hand, DTSC 1302 is graded with a letter grade (like A, B, C, D, or F) instead of on a pass/fail basis. Each letter grade corresponds to a range of percentages.

% Grade	Final grade assigned
[90%, ∞)	A
[80%, 89%)	B
[70%, 79%)	C
[60%, 69%)	D
[0%, 59%)	F

In summary,

- Students will be assigned a PASS/FAIL grade after completing DTSC 1301 (mid-October).
- A student must pass DTSC 1301 to continue on to DTSC 1302.

- Students will be instead assigned a final letter grade for DTSC 1302 at the end of fall session (mid-December).
- To progress to follow-on courses, a student must earn a D or better in DTSC1302.

Course Policies

Course policies have been provided in a separate document available on our course Canvas page.