

LAS6292 TCD Research Methods: Data Collection & Management Spring 2026

1 Instructor, Course Sessions, & Office Hours

Instructor: Dr. Emilio M. Bruna | embruna@ufl.edu | (352) 846-0634

Course Sessions: Friday 12:50-3:50 PM (Periods 6-8) in Grinter Hall 376

Office Hours: Tuesday and Wednesday from 10:30-11:45 am in person (380 Grinter Hall) or online (link provided on course Canvas page). You may sign up for a specific time slot here: <https://embruna.youcanbook.me>. Please let me know if you can't make these times and we will make alternative arrangements.

2 Course Description, Objectives, and Learning Outcomes

Courses taught as LAS 6292 are an introduction to field research methods for studies focused on natural resource use and management by local populations in tropical regions. They emphasize participatory approaches and integration of natural and social science tools.

This session of LAS 6292 is a practical introduction to *Data Collection & Management*: the methods, tools, and best practices for collecting, organizing, managing, and visualizing qualitative and quantitative data. It is designed for graduate students from all disciplines at any stage of their program. At the conclusion of the course students will be able to:

1. Describe the different types of research data;
2. Explain the need for and benefits of data management and sharing;
3. Describe and implement best practices for the collection, storage, management, archiving, and sharing of research data;
4. Find, download, and analyze publicly available data from repositories;
5. Carry out simple and reproducible data corrections and data set organization;
6. Describe public policies and agency requirements for data management and sharing;
7. Articulate the major legal and ethical considerations regarding data collection, use, and storage (e.g., privacy/human subjects, intellectual property, international law);
8. Create and Implement Data Management Plan in funder-specific formats;
9. Identify and properly use tools for more efficient and secure data collection in the field.

3 Course Format, Prerequisites, & Credits

Format: In-person, **Credits:** 3, **Prerequisites:** None

Concentrations & Certificates: Doctoral Students can apply this course towards the requirements for the Certificate in Tropical Conservation & Development. See <https://uftcd.org/academics/certificate/curriculum/> for more information.

4 Textbooks, Learning Materials, and Supply Fees

Students are not required to purchase any textbooks or course materials. All class materials & assignments will be made available on the course website. Some assigned readings may come from the *New York Times* or *Wall Street Journal* and have dynamic multimedia data visualizations and video that can't be appreciated in the posted .pdf format. *Students in this class should sign up for free online access to both the NYT and WSJ* by following the instructions at [the UF Libraries Website](#).

Materials and Fees: None.

5 Course Schedule, Assignments & Grades

The contents of the course, including subjects covered in each course session and assigned readings, are subject to change based on student needs and input, current events, and technical advances related to the course subject matter. Changes will be announced via Canvas and an updated syllabus will be posted.

Class Calendar

Week	Dates	Topic
1	1/16	'Data' across disciplines and the Research Data Life Cycle
2	1/23	File Formats, Naming Conventions, Data Storage & Security
3	1/30	Structure & Format of Data & Datasets
4	2/6	Reproducible Data (Re)organization
5	2/13	QA/AC 1: Data Entry & Validation
6	2/20	QA/QC 2: Correction & Synthesis with Open Refine
7	2/27	QA/QC 3: Visualizing Data (to Find Mistakes)
8	3/6	Metadata & Codebooks; Data Sharing, Reuse, & Archives
9	3/13	Data Management Plans
10	3/20	No Class - Spring Break
11	3/27	Efficient Data Collection
12	4/3	Transcription & Translation
13	4/10	Paperless Data Collection
14	4/17	Automated Data Extraction
15	4/24	No Class: Reading Days
Finals Week	4/30	Deadline for Final Project Submission: 10 AM

Final Course Grades & Grading Policy

Course grading is consistent with UF grading policies. **The final course grade is based on the assignments below..** Most of the in-class assignments involve hands-on practice with data collection or manipulation. In some weeks, however, assignment will be the submission of questions for group discussion or brief reflection on the issues from the readings. Note also that most in-class assignments are designed to be completed during the class session, but to ensure students master the concepts rather than rush through them *they can be submitted anytime before 9 am the day of the following class session.* Late assignments will lose 10 pts. Finally, **there is no Final Exam in this course, and the Individual Project is due on the scheduled date of the final exam.**

Assignments

Assignment	Points (%)	Due
Weekly in-class exercises	350 (35%)	Following Friday at 9 am
Data Management Plan	150 (15%)	27 March
Individual Data Cleanup Project	500 (50%)	30 April
TOTAL	1000 (100%)	

Grading Scale

Course grades will be based on the percentage of total points earned and will be assigned with the following scale: **A:** >93% **A-:** 92-90% **B+:** 89-87% **B:** 86-83% **B-:** 82-80% **C+:** 79-77% **C:** 76-73% **C-:** 72-70%. **D+:** 69-67% **D-:** 62-60% **E:** 59% and below. *For information on how UF assigns grade points, visit:* <https://catalog.ufl.edu/UGRD/academic-regulations/grades-grading-policies/>

6 Required Reading & Preparation for Class Sessions

Please review the assigned material *before* class. *All items are posted on the Canvas site.*

Week 1: Course Introduction

No assigned reading

Week 2: File Formats, Naming Conventions, Data Storage, and Data Security.

Read:

1. Jan Čurn. 2014. How a bug in Dropbox permanently deleted my 8000 photos. [\[read online\]](#) [\[download pdf\]](#)
2. Panzarino, M. 2012. How Pixar's Toy Story 2 was deleted twice, once by technology and again for its own good. TNW. [\[read online\]](#) [\[\[download pdf\]\]](#)
3. Hart EM et al. (2016) Ten Simple Rules for Digital Data Storage. PLoS Comput Biol 12(10): e1005097. [\[read online\]](#) [\[download pdf\]](#)

Watch:

1. E. Bruna: [How To Name Your Files](#)
2. E. Bruna: [How to Organize Your Files](#)
3. E. Bruna: [How to Store and Backup Your Files](#)

Week 3: Data structure & format of data and datasets

Read

1. Tesi, W. 2020. An Outdated Version of Excel Led the U.K. to Undercount COVID-19 Cases. Slate. [\[read online\]](#) [\[download pdf\]](#)
2. Stolberg et al. 2020. CDC Test Counting Error Leaves Epidemiologists 'Really Baffled'. NY Times. [\[read online\]](#) [\[download pdf\]](#)
3. Broman, K. W., & Woo, K. H. (2018). Data organization in spreadsheets. The American Statistician, 72(1), 2-10. [\[read online\]](#) [\[download pdf\]](#)
4. Johnson, B. D., Dunlap, E., & Benoit, E. (2010). Organizing "mountains of words" for data analysis, both qualitative and quantitative. Substance Use & Misuse, 45(5), 648-70. [\[read online\]](#) [\[download pdf\]](#)

Week 4: Reproducible data (re)organization**Read:**

1. Laskowski, 2020. What to do when you don't trust your data anymore. [\[read online\]](#) [\[download pdf\]](#)
2. Pennisi, E. 2020. Spider biologist denies suspicions of widespread data fraud in his animal personality research. Science. [\[read online\]](#) [\[download pdf\]](#)
3. Alston, J. M., and Rick, J. A.. 2020. A Beginner's Guide to Conducting Reproducible Research. Bull Ecol Soc Am 00(00):e01801. [\[read online\]](#) [\[download pdf\]](#)
4. Wilson G, Bryan J, Cranston K, Kitze J, Nederbragt L, Teal TK (2017) Good enough practices in scientific computing. PLoS Comput Biol 13(6): e1005510. [\[read online\]](#) [\[download pdf\]](#)

Watch:

1. [A Data Sharing and Management Snafu in 3 Short Acts](#), by the NYU Health Sciences Library

Week 5: QA/QC 1: Data Entry & Validation**Read:**

1. Kamentz, A. 2018. The School Shootings that weren't.NPR [\[read online\]](#) [\[download pdf\]](#)
2. Lincoln, Matthew D. 2018. "Best Practices for Using Google Sheets in Your Data Project." [\[read online\]](#) [\[download pdf\]](#)

Week 6: QA/QC 2: Correction & Synthesis with Open Refine

No assigned reading

Week 7: QA/QC 3: Finding Errors with Data Visualization**Read:**

1. Rougier NP, Droettboom M, Bourne PE (2014) Ten Simple Rules for Better Figures. PLoS Comput Biol 10(9): e1003833. [\[read online\]](#) or [\[download pdf\]](#)

Watch:

1. Tommy McCall: [The simple genius of a good graphic](#)
2. R. Luke DuBois: [Insightful human portraits made from data](#)

Week 8: Metadata, Codebooks; Data Sharing, Reuse, & Archives**Read (Metadata):**

1. Michener, W.K., et al . 1997. Non-geospatial metadata for the ecological sciences. *Ecological Applications* 7: 330–342. [\[read online\]](#) [\[download pdf\]](#)
2. Pp 446-450 in Bernard, H.R. and Bernard, H.R., 2013. *Social research methods: Qualitative and quantitative approaches*. Sage. [\[\[download pdf\]\]](#)

Read (Data Sharing):

1. Alexander, S.M., Jones, K., Bennett, N.J. et al. Qualitative data sharing and synthesis for sustainability science. *Nat Sustain* 3, 81–88 (2020). [\[read online\]](#) [\[download pdf\]](#)
2. Renaut, S. et al. 2018. Management, Archiving, and Sharing for Biologists and the Role of Research Institutions in the Technology-Oriented Age. *BioScience* 68(6)400–411 [\[read online\]](#) [\[download pdf\]](#)
3. Duke, Clifford S., and John H. Porter. 2013. “The ethics of data sharing and reuse in biology.” *BioScience* 63(6): 483-489. [\[read online\]](#) [\[download pdf\]](#)
4. Tenopir, C., et al. (2015). Changes in data sharing and data reuse practices and perceptions among scientists worldwide. *PloS one*, 10(8), e0134826. [\[read online\]](#) [\[download pdf\]](#)
5. Mauthner, NS, & O. Parry O. 2009. Qualitative data preservation and sharing in the social sciences: On whose philosophical terms?. *Australian J of Social Issues* 44(3):291-307. [\[read online\]](#) [\[download pdf\]](#)

Week 9: Data Management Plans**Read**

1. Michener, W. K. (2015). Ten simple rules for creating a good data management plan. *PLoS Computational Biology*, 11(10), e1004525. [\[read online\]](#) or [\[download pdf\]](#)
2. Goodman A, et al. (2014) Ten Simple Rules for the Care and Feeding of Scientific Data. *PLoS Comput Biol* 10(4): e1003542. [\[read online\]](#) or [\[download pdf\]](#). this paper connects what we’ve done with what’s coming up next

Watch

1. [Content of a DMP” \(by RWTH Aachen University\)](#)

Week 10: Spring Break

No class session due to Spring Break, No assigned reading

Week 11: Efficient data collection**Read:**

1. Redman, T. 2016. Bad Data Costs the U.S. \$3 Trillion Per Year. Harvard Business Review. [\[read online\]](#) [\[download pdf\]](#)

Watch

1. Atul Gawande's TED Talk: [The Importance & Value of the CHECK LIST](#).
2. Animated summary of [The Checklist Manifesto](#).
3. Jess Stratton's LinkedIn Learning Video Overview: "Use Google Forms to Create Surveys" (7 min.). Watch it [here](#); must be on UF computer or use UF proxy.
4. OPTIONAL: The more advanced, multi-video "Google Forms Essential Training Course". These short (1-3 min) videos explain each step in more detail. It's great, and only 39 min long from start to finish. Watch [here](#); must be on UF computer or use UF proxy.

Week 12: Transcription & Translation**Read:**

1. Bakker, Rebecca. "Transcription Tools and Software" (2017). Works of the FIU Libraries. 62. [\[read online\]](#) [\[download pdf\]](#)
2. Watch "The Text Wash team discusses text anonymization" [\[link\]](#); related blog post [\[link\]](#)

Watch

1. Dr. Jarek Kriukow: How to transcribe interviews - [Part 1: "naturalism" and "denaturalism"](#)
2. Dr. Jarek Kriukow: How to transcribe interviews - Part 2: [Which approach to use?](#)

6.0.1 Week 13: Paperless data collection.**Read:**

1. Aanensen DM, Huntley DM, Feil EJ, al-Own F, Spratt BG (2009) EpiCollect: Linking Smartphones to Web Applications for Epidemiology, Ecology and Community Data Collection. PLoS ONE 4(9): e6968. [\[read online\]](#) [\[download pdf\]](#)
2. Moylan, CA et al. 2013. Increasingly mobile: How new technologies can enhance qualitative research. Qualitative social work: research and practice, 14(1):36-47. [\[read online\]](#) [\[download pdf\]](#)
3. Teacher, Amber G. F. et al. Smartphones in ecology and evolution: a guide for the app-rehensive. Ecology and Evolution 3(16):5268– 5278 [\[read online\]](#) [\[download pdf\]](#)

Watch

1. E. Bruna: [Paperless Data Collection](#)
2. Great EpiCollect tutorials by UConn's David Dickson
 - a. [Intro to EpiCollect 5](#)
 - b. [Creating an EpiCollect PROJECT](#)
 - c. [Creating a FORM for your EpiCollect Project](#)
 - d. [Collecting data in EpiCollect with your phone or tablet](#)

Week 14: Automated data extraction**Read:**

1. Drinkwater, R. E., Cubey, R. W., & Haston, E. M. (2014). The use of Optical Character Recognition (OCR) in the digitization of herbarium specimen labels. *PhytoKeys*, (38), 15-30. [\[read online\]](#) [\[download pdf\]](#)
2. Joo, Jungseock and Zachary C. Steinert-Threlkeld. 2019. Image as data: Automated visual content analysis for social science. [\[read online\]](#) [\[download pdf\]](#)

Week 15: Readings Days

No class session due to Reading days, No assigned reading

7 Academic Policies and Resources

Academic policies for this course are consistent with university policies. See <https://syllabus.ufl.edu/syllabus-policy/uf-syllabus-policy-links/> for policies regarding Attendance and Makeup Work, Academic Accommodations, Grading, Course Evaluation and Feedback, the Honesty Policy, In-Class Recording, and Academic Resources.

Campus Health and Wellness Resources

Visit <https://one.ufl.edu/whole-gator/topics> for resources that are designed to help you thrive physically, mentally, and emotionally at UF. *Please contact UMMatterWeCare for additional and immediate support.*

Software Use

All faculty, staff and students of the university are required and expected to obey the laws and legal agreements governing software use. Failure to do so can lead to monetary damages and/or criminal penalties for the individual violator. Because such violations are also against university policies and rules, disciplinary action will be taken as appropriate.

Class Discussions and Group Work

In this class we may explore some challenging, important problems and increase our understanding of different perspectives and approaches for addressing them. These conversations may not always be easy; we sometimes will make mistakes in both how we communicate our perspective and what we hear other say. There may be times when we need patience, courage, imagination, and of course mutual respect to engage our texts, classmates, instructors, guests, and our own ideas and experiences. Disrespectful or disruptive behavior will not be tolerated. And always remember that as scholars we must employ critical thinking, rely on data, and cite verifiable sources and experts to interrogate all assigned readings and subject matter in this course as a means of determining if we agree with classmates and instructors. No lesson is intended to espouse, promote, advance, inculcate, or compel a particular feeling, perception, viewpoint or belief.

7.1 Evaluation

Students are expected to provide professional and respectful feedback on the quality of instruction in this course by completing course evaluations online. Students can complete evaluations in three ways: (1) The email they receive from GatorEvals, (2) Their Canvas course menu under GatorEvals, (3) The central portal at <https://my-ufl.bluera.com>. Guidance on how to provide constructive feedback is available at <https://gatorevals.ua.ufl.edu/students/>. Students will be notified when the evaluation period opens. Summaries of course evaluation results are available to students at <https://gatorevals.ua.ufl.edu/public-results/>.