

S-061: Statistical and Psychometric Methods for Educational Measurement
DRAFT Syllabus, Harvard Graduate School of Education
September 4 – December 12, 2018

Class meets Mondays and Wednesdays, 10:10-12:00, in Longfellow 229

Course website: <https://canvas.harvard.edu/courses/53293>

Instructor: Andrew Ho

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TF: Ben West

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Instructor Office Hours: After class or email Wendy_Angus@gse.harvard.edu for appointments.

Description

This course covers statistical and psychometric methods for improving the design and use of educational and psychological measurements. Students will learn classical and modern measurement techniques, including reliability, generalizability theory, validation, differential item functioning, item response theory, scaling, linking, standard setting, and adjustments for measurement error. Contexts of assessments include small-scale educational and psychological measures for targeted research studies as well as large-scale district, state, and national assessments for formative, summative, and evaluative purposes. In the first two thirds of the course, students will learn and apply methods in class and complete data analytic assignments. In the remainder of the course, students will read and critique recent research in educational measurement. Students will also develop and present a research proposal that has promise for advancing the field.

Prerequisite: S-052 or at least two semesters of applied statistics that includes estimation and interpretation of logistic regression coefficients. Experience with multilevel models is encouraged but not required. This course complements S-043 and S-090, and students may enroll in these courses in any order. Students who do not meet the prerequisite may enroll instead in S-011, which provides a nontechnical introduction to educational measurement.

Grading

The requirements of the course include in-class attendance (5%), active and effortful participation in class and in out-of-class Google Doc discussions (15%), satisfactory completion of 4 assignments (35%), an in-person oral exam (10%), and satisfactory completion and in-person presentation of a full research proposal or project (35%). These weights are approximate—the final course grade may factor in improvement over time and exemplary performance on one or more dimensions. Students are required to complete the first assignment individually and the remaining three in pairs. The oral exam must be completed individually in person.

This course is letter-grade-only; students may not take this course on a Satisfactory/No Credit basis. Registered students must submit a course evaluation form at the end of the semester to fulfill the requirements of the course. In-person auditing of this course is not allowed—all attendees must be registered students.

Support

Our TF, Ben, will hold weekly office hours by appointment. Occasionally, Ben may also offer optional discussion sections as she sees necessary; these may be most common around assignment due dates. Attendance at these sessions is strongly recommended. Office hours with the instructor are typically available after class meetings and are also available by appointment. Contact my assistant, at Wendy_Angus@gse.harvard.edu to schedule appointments. Occasional one-on-one check-ins with the instructor are strongly recommended.

DRAFT CALENDAR

(I expect this calendar to change slightly as I accommodate the pace of this new merged course)

September 2018						
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
2	3 – Holiday	4 – Class 1 Validation	5 – Class 2 Rel/CTT	6 – Asgn 1 Released	7	8
9	10 – Class 3 Reliability	11	12 – Class 4 G Theory	13	14 – Asgn 1 Due 5PM	15
16	17 – Class 5 G Theory	18	19 – Class 6 MVG Theory	20 – Asgn 2 Released	21	22
23	24 – Class 7 IRT	25	26 – Class 8 IRT	27	28 – Asgn 2 Due 5PM	29

October 2018						
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
30	1 – Class 9 PolyIRT	2	3 – Class 10 Linking	4 – Asgn 3 Released	5	6
7	8 – Holiday	9	10 – Class 11 Linking	11	12 – Asgn 3 Due 5PM	13
14	15 – Class 12 Bias/DIF	16	17 – Class 13 EFA/CFA	18 – Asgn 4 Released	19	20
21	22 – Class 14 SEM	23	24 – NoClass (MCASTAC)	25	26 – Asgn 4 Due 5PM	27
28	29 – Class 15 Stand.Setting	30	31 – Class 16 Growth/Acc	1	2	3

November 2018						
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
4	5 – Class 17 Effect Sizes	6	7 – Class 18 Frontiers	8 – Oral Exam Day	9 – Oral Exam Day	10
11	12 – Holiday	13	14 – Class 19 ***	15	16 – Prelim proposal due	17
18	19 – Class 20 ***	20	21 – Holiday	22 – Thanksgiving	23	24
25	26 – Class 21 ***	27	28 – Class 22 ***	29	30 - Full drafts due	1

*** I will choose topics and readings for the last 4 classes to relate to student projects.

December 2018						
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
2	3 – Present Session 1: 9am-12pm	4 –	5 – Present Session 2: 9am-1pm	6	7 – Present Session 3? 12:30-3pm?	8
9	10	11	12	13	14 – Final Projects Due (5PM)	15

READINGS

I require students to respond to online, Google Doc, discussion questions to central readings by 10PM the night before each class. A good response will demonstrate that the student has read and carefully considered the central reading and spent time considering what the discussion question is asking. Central readings that are very technical need not be mastered in detail but do pay attention to notation and the underlying motivation of derivations. I intend noncentral readings as additional context and citations for future reference. Links will work on campus and, if you are off campus, if you have a VPN connection. Other readings are available via the [iPa©](#) tab on the Canvas website

There are two required textbooks that are available for purchase:

- American Educational Research Association, American Psychological Association, & National Council on Measurement in Education. (2014). *Standards for educational and psychological testing*. Washington, DC: American Educational Research Association. I recommend purchasing this via [APA/AERA/NCME](#), where members can get a discount (\$49.95), and you'll also get an electronic text (very useful). The Coop is also an option.

- Koretz, D. (2009). *Measuring up: What educational testing really tells us*. Cambridge: Harvard University Press. See [Amazon](#) or the Coop.

September 4 – Class 1: Validation

- 1) Koretz (2008), Chapter 2, pp. 16-34. (required text)
- 2) AERA/APA/NCME Standards, Chapter 1, pp. 11-31. (required text)
- 3) 2016 MCAS Technical Report Section 3.9: [link](#)

Supplemental reading:

- 4) Koretz (2008), Chapter 9, pp. 215-234. (required text)
- 5) Kane, M. T. (2013). Validating the interpretations and uses of test scores. *Journal of Educational Measurement*, 50(1), 1-73. [link](#)
- 6) Haertel, E. (2013). Getting the help we need. *Journal of Educational Measurement*, 50(1), 84-90. [link](#)
- 7) Ho, A. (2013). The epidemiology of modern test score use: Anticipating aggregation, adjustment, and equating. *Measurement: Interdisciplinary Research and Perspectives*, 11(1-2), 64-67. [link](#)

September 5 – Class 2: Reliability and Classical Test Theory

- 1) AERA/APA/NCME Standards, Chapter 2, pp. 33-47. (required text)
- 2) 2016 MCAS Technical Report Section 3.7: [link](#)

Supplemental reading:

- 3) Koretz (2008), Chapter 7, pp. 143-178. (required text)

September 10 – Class 3: Reliability

- 1) Traub, R. E., & Rowley, G. L. (1991). Understanding reliability. *Educational Measurement: Issues and Practice*, 10(1), 37-45. [link](#)

Supplemental reading:

- 2) Crocker, L., & Algina, J. (1986). *Introduction to classical and modern test theory*. Belmont, CA: Wadsworth Group. Chapter 6: Reliability and the classical true score model pp. 105-113, 122-124; Chapter 7: Procedures for estimating reliability pp. 131-150.
- 3) Haertel, E. (2006). In R. Brennan (Ed.) *Educational measurement*. Westport, CT: Praeger. Chapter 3, 65-87. (iPa©)

September 12 – Class 4: Generalizability Theory

- 1) Shavelson, R.J. & Webb, N.W. (1991). *Generalizability theory: A primer*. Newbury Park, CA: Sage Publications. 1-24. ([iPa©](#))

Supplemental reading:

- 2) Brennan, R. L. (2001). *Generalizability theory*. New York: Springer-Verlag. 1-19.

September 17 – Class 5: Generalizability Theory

- 1) Brennan, R. L. (1992). Generalizability theory. *Educational Measurement: Issues and Practice*, 11(4), 27-34. [link](#)

Supplemental reading:

- 2) Ho, A.D. & Kane, T.J. (2013). *The reliability of classroom observations by school personnel*. Bill & Melinda Gates Foundation. [link](#)

September 19 – Class 6: Multivariate Generalizability Theory

- 1) Hill, H. C., Charalambous, C. Y., & Kraft, M. A. (2012). When rater reliability is not enough: Teacher observation systems and a case for the generalizability study. *Educational Researcher*, 41(2), 56-64. [link](#)

Supplemental reading:

- 2) Cronbach, L. J., Linn, R. L., Brennan, R. L., & Haertel, E. H. (1997). Generalizability analysis for performance assessments of student achievement or school effectiveness. *Educational and Psychological Measurement*, 57(3), 373-399. [link](#)

September 24 – Class 7: Scaling and Item Response Theory

- 1) Harris, D. (1989). Comparison of 1-, 2-, and 3-parameter IRT models. *Educational Measurement: Issues and Practice*, 8(1), 35-41. [link](#)
- 2) 2016 MCAS Technical Report Section 3.6: [link](#)
- 3) Stata Manual (version 15), pp. 1-17. <http://www.stata.com/manuals/irt.pdf>

Supplemental reading:

- 4) Stevens, S. S. (1946). On the theory of scales of measurement. *Science (New York, N.Y.)*, 103(2684), 677-680. [link](#)
- 5) AERA/APA/NCME Standards, Chapter 5, pp. 95-109, focus on scores, scales, and norms. (required text)

September 26 – Class 8: Item Response Theory

- 1) Yen, W. M., & Fitzpatrick, A. R. (2006). In R. Brennan (Ed.), *Educational measurement*. Westport, CT: Praeger. pp. 111-118. Sections 1-2.4 (iPa©)
- 2) Stata Manual (version 15), pp. 27-74. <http://www.stata.com/manuals/irt.pdf>

Supplemental reading:

- 3) Ho, A. D., & Yu, C. (2015). Descriptive statistics for modern test score distributions: Skewness, kurtosis, discreteness, and ceiling effects. *Educational and Psychological Measurement*, 75(3), 365-388. [link](#)

October 1 – Class 9: Polytomous Item Response Models

- 1) Stata Manual (version 15), pp. 75-89. <http://www.stata.com/manuals/irt.pdf>
- 2) Jessen, A., Ho, A. D., Corrales, C. E., Yueh, B., & Shin, J. J. (2018). Improving measurement efficiency of the Inner EAR scale with Item Response Theory. *Otolaryngology-Head and Neck Surgery*, 158, 1093-1100. [link](#)

October 3 – Class 10: Linking

- 1) AERA/APA/NCME Standards, Chapter 5, pp. 95-109, focus on linking. (required text)

Supplemental reading:

- 2) Reardon, S. F., Kalogrides, D., & Ho, A. D. (2018). Validation methods for aggregate-level test scale linking: A case study mapping school district test score distributions to a common scale. Working paper. [link](#)
- 3) Holland, P. W., & Dorans, N. J. (2006). In R. Brennan (Ed.), *Educational measurement* (4th ed.). Westport, CT: American Council on Education, Praeger Publishers. pp. 197-201. ([iPa©](#))

October 10 – Class 11: Linking (cont.)

- 1) Review day: <http://bit.ly/s61edmeas18archive>

October 15 – Class 12: Bias/DIF

- 1) AERA/APA/NCME Standards, Chapter 3, pp. 49-72. (required text)
- 2) Stata Manual (version 15), pp. 189-202. <http://www.stata.com/manuals/irt.pdf>

Supplemental reading:

- 3) Koretz (2008), Chapter 11, pp. 260-280. (required text)
- 4) Abedi, J., Hofstetter, C. H., & Lord, C. (2004). Assessment accommodations for English Language Learners: Implications for policy-based empirical research. *Review of Educational Research*, 74, 1-28. [link](#)

October 17 – Class 13: Factor Analysis

- 1) Stata Manual (version 15), pp. 5-11. <http://www.stata.com/manuals/mvfactor.pdf>
- 2) Weziak-Bialowolska, D., McNeely, E., & VanderWeele, T. J. (2018). Human Flourishing in Cross Cultural Settings. Evidence from the US, China, Sri Lanka, Cambodia and Mexico. Working paper. [Canvas link](#)

October 22 – Class 14: Connections to Structural Equation Modeling

- 1) Stata Manual (version 15), examples 1-4, 15, 19-23, 27g-29g.

October 24 – Class 15: Standard Setting and Criterion-Referenced Reporting

- 1) AERA/APA/NCME Standards, Chapter 5. (required text)
- 2) Ho, A. D. (2008). The problem with "proficiency": Limitations of statistics and policy under no child left behind. *Educational Researcher*, 37(6), 351-360. [link](#)

Supplemental reading:

- 3) Glass, G. V. (1978). Standards and criteria. *Journal of Educational Measurement*, 15(4), 237-261. [link](#)
- 4) McClarty, K. L., Way, W. D., Porter, A. C., Beimers, J. N., & Miles, J. A. (2013). Evidence-based standard setting. *Educational Researcher*, 42(2), 78-88. [link](#)
- 5) Koretz (2008), Chapter 8. (required text)

October 29 – Class 16: Growth and Vertical Scaling

- 1) Kolen, M. J. (2006). In R. Brennan (Ed.), *Educational measurement* (4th ed.). Westport, CT: Praeger Publishers. pp. 171-180. ([iPa©](#))

Supplemental reading:

- 2) Briggs, D. C. (2013). Measuring growth with vertical scales. *Journal of Educational Measurement*, 50(2), 204-226. [link](#)
- 3) Castellano, K. E., & Ho, A. D. (2013). *A practitioner's guide to growth models*. Council of Chief State School Officers. [link](#)
- 4) Pearl, J. (2014). Lord's paradox revisited - (Oh Lord! Kumbaya!). University of California. Technical Report R-36 (October). [link](#)

October 31 – Class 17: Test-Based Accountability Models and Metrics

- 1) AERA/APA/NCME Standards, Chapter 12 and 13, pp. 183-213. (required text)
- 2) Koretz (2008), Chapter 10, pp. 235-259. (required text)

Supplemental reading:

- 3) Ho, A. D. (2007). Discrepancies between score trends from NAEP and state tests: A scale-invariant perspective. *Educational Measurement: Issues and Practice*, 26(4), 11-20. [link](#)

November 5 – Class 18: Effect Sizes and Plausible Values

- 1) Lipsey, M. W., Puzio, K., Yun C., Hebert, M. A., Steinka-Fry, K., Cole, M. W., Roberts, M., Anthony, K. S., Busick, M. D. (2012). *Translating the statistical representation of the effects of educational interventions into more readily interpretable forms*. (NCSE 2013-3000). Washington, DC: National Center for Special Education Research, Institute of Education Sciences, U. S. Department of Education. Retrieved from <https://ies.ed.gov/ncser/pubs/20133000/pdf/20133000.pdf>

Supplemental reading:

- 2) Mislevy, R. J., Johnson, E. G., & Muraki, E. (1992). *Scaling procedures in NAEP*. *Journal of Educational Statistics*, 17, 131-154. [link](#)

November 7 – Class 19: Psychometric Frontiers

- 1) Wainer, H. (2010). 14 conversations about three things. *Journal of Educational and Behavioral Statistics*, 35(1), 5-25. [link](#)

Supplemental reading:

- 2) Thissen, D. (2016). Bad questions: An essay involving Item Response Theory. *Journal of Educational and Behavioral Statistics*, 41, 81-89. [link](#)
- 3) Ho, A. D. (2016). The new (educational) statistics: Properties of scales that matter. *Journal of Educational and Behavioral Statistics*, 41, 94-99. [link](#)

Oral Exam

I will administer a 10-15 minute oral (conversational) exam to each of you on November 8 or 9 during set time windows to be scheduled. The goal is to encourage you to become fluent enough in the language of measurement and psychometrics that you can speak it actively and accurately in conversation. I will provide a general list of questions well in advance of the oral exam.

Course Project

To complete the course, you must develop an original research project, present it to other class members, and submit a final written product. In conducting this research project, you may collaborate with a partner in the class. While my vision of what constitutes a viable project is somewhat contextual and subject to negotiation, there are two broad possibilities:

1. A complete and extended outline of a research paper, including results from data analysis that uses the methods introduced in this course. I will provide more detail on what is meant by “complete and extended outline”, but this will require you to write down the underlying structure of the paper from start to finish. This includes (in order): 1) Introduction / motivation; 2) Background / literature review; 3) Data and sample; 4) Methods; 5) Results; and 6) Discussion and implications for policy and/or practice. To be clear, while this is less effort than a completed final paper, it also means that you must produce the main tables and figures that you intend to include in a final version of your paper.
2. If producing results is not possible, I will require you to write a “pre-analysis plan”. This is very similar to #1 above, except that the “Results” section will instead require a full list of models that you wish to estimate, a detailed discussion of what you expect to find, and what you might learn from your study (regardless of how the analysis turns out). This option is available primarily for students who are working on a project that has scholarly promise, but also logistical headaches that are beyond your control (for example, if you are collecting data or waiting on the acquisition of a restricted-use data set).

Your grade on the course project will depend on the contribution of the project is and how well you implement it. In addition to the scheduled deadlines on the syllabus, I encourage you to keep me informed on the progress of your project throughout the semester.

The maximum length of the extended outline or pre-analysis plan (not counting references, tables, and figures) is 20 pages of double-spaced 12-point type with one-inch margins. During the course, we will provide explicit guidance and support tailored to each research project. I expect that your course project will eventually (after the course is complete) result in a published research paper that can appear on your Curriculum Vitae.

To help you prepare the presentation of your course project, we will devote class time to discussing the components of a good scholarly talk. We may also be available to help you practice a “dry run” of your presentation. You (and perhaps your research partner) should make an appointment with me to discuss the feedback I provide on your draft. You should also see

Ben or me for ongoing support for your project. Prior to any meetings with either of us, please prepare a brief memo describing your agenda for the meeting and email it the day before our meeting. This will help us to help you.

Additional optional texts

All students should consider #1, below, for their reference library. Application-oriented students should consider #3 and #6 for Generalizability Theory and IRT, respectively. More technically oriented students should consider #4 and #5. Students interested in practical methods for large-scale testing should consider #2.

1) Educational Measurement, 4th Edition. ISBN: 978-0275981259

<http://www.amazon.com/Educational-Measurement-American-Council-Education/dp/0275981258>

2) Test Equating, Scaling, and Linking, 2nd Edition. ISBN: 978-1441923042

<http://www.amazon.com/Test-Equating-Scaling-Linking-Statistics/dp/1441923047>

3) Generalizability Theory: A Primer. ISBN: 978-0803937451

<http://www.amazon.com/Generalizability-Theory-Measurement-Methods-Science/dp/0803937458/>

4) Generalizability Theory. ISBN: 978-1441929389

<http://www.amazon.com/Generalizability-Theory-Statistics-Behavioral-Sciences/dp/144192938X/>

5) Fundamentals of Item Response Theory. ISBN: 978-0803936478

<http://www.amazon.com/Fundamentals-Response-Measurement-Methods-Science/dp/0803936478/>

6) Applications of Item Response Theory to Practical Testing Problems. ISBN: 978-0898590067

<http://www.amazon.com/Applications-Response-Practical-Testing-Problems/dp/089859006X/>

Statistical and psychometric computing

Statistical computing is an integral part of S-061. I will be using Stata this year, and you will require at least Stata 14 to use Item Response Theory methods. I assume that everyone is comfortable using a computer to perform basic statistical analysis, although I don't necessarily assume that you've used Stata.

I do not teach programming during class time, although code is threaded through the lecture slides. We provide resources to help you learn how to program on your own at your own pace. Ben may also cover coding issues in their sections.

There are two ways you can access Stata. The least expensive option is to use one of the networked workstations available in the Learning Technology Center (LTC) on the 3rd floor of Gutman Library and elsewhere on the HGSE campus (e.g., on the 2nd and 4th floors of Gutman Library). For students who would like to use Stata on their own PCs, you may purchase Stata following this link:

<http://www.stata.com/order/new/edu/gradplans/student-pricing/>. Stata/IC, which will be enough for this course, is available for \$45 for a 6-month license and \$198 for a perpetual license.

I do allow students to complete problem sets in R, although students are responsible for their own coding help and code quality assurance.

Collaboration and study groups

Many people learn best when working in a group, and I encourage collaborative learning. To mimic statistical and psychometric work in the real world and to provide a chance for you to use this language actively, I mandate completion of assignments in pairs starting from the second assignment.

We mandate collaboration for at least three reasons. First, learning statistical and psychometric methods is like learning a language. To learn it, one must “speak” it actively and in a genuine context with other individuals. Second, collaborative quantitative analysis is the norm and individual work is the exception in the world of practice. Third, my experience has been that, on average, students who work in pairs and groups both perform better and enjoy themselves more than students who work individually. Statistical and psychometric collaboration is a case where the whole is greater than the sum of its parts.

Beyond pairs, study groups can be helpful to you as you prepare to do the assignments, both in terms of how to approach the work (including how to use the computer effectively) and in terms of how to think about important concepts. **However, students must turn in work as pairs or individuals where specified. Papers should be written in the pair or individual’s own words—your text should reflect your own understanding of the material.**

Each group will undoubtedly develop its own structure; nevertheless, here are a few suggestions:

- Groups with six or more members become less useful and may be harder to organize because finding common meeting times becomes increasingly problematic.
- Plan at least one session of 1½ to 2 hours (early enough so that there is sufficient time if an additional session is necessary). After 2 hours of statistics, everyone’s eyes will be glazing over.
- Schedule the meetings so that you have sufficient time afterwards to write in pairs or individually. When we read your assignments, we focus on what you say and how you say it. The assignments have been devised to require not only computation and programming skills, but skills in analyzing and reporting the material.
- Use the groups to ask questions, try out interpretations, and so on—you each represent each other’s resources. Often one person can explain something that makes you see something in a new way—or the other way around. Different people have different insights and strengths – some are good programmers, some ask good questions, others value contextual analysis—and you can learn from listening to what others in a group have to offer.
- **Be careful about sitting in groups at laptops or computers and simultaneously composing text.** You and your partner must write your own paper, on your own, using your own language. **Your papers should be written in your own words, not those of your study group.**
- Be sensitive to the distinction between collaboration to plan for and interpret the assignment and collaboration to write up the assignment. The former is encouraged; the latter is forbidden beyond, when applicable, your partner. If the distinction begins to feel murky, refocus your group’s work on lecture content and course materials. And see me if you have any questions at all.

Accommodations

We encourage students needing accommodations in instruction or evaluation to notify us early in the semester. If you have a disability or health concern that may have some impact on your work in this class and for which you may require adjustments or accommodations, please contact Eileen Berger eileen_berger@gse.harvard.edu, Access and Disability Services (ADS) administrator in Gutman 124. No accommodations can be given without authorization from ADS, or without notice. If you already have a Faculty Contact Form for this course from ADS, please provide us with that information privately in our offices so that we can make those adjustments in a timely manner. All inquiries and discussions about accommodations will remain confidential.

A Note on Plagiarism

Please read the School's policy on plagiarism in the HGSE Student Handbook, which includes the statement, "Students who submit work either not their own or without clear attribution to the original source, for whatever reason, ordinarily will be dismissed from the Harvard Graduate School of Education." Attention to this policy is particularly important in a course like S-061, in which collaboration with other students is often required and generally encouraged. If you work closely with other students or partnerships—a process that I encourage and fully support—recognize the other students' contributions explicitly in your written account (a footnote is fine for this purpose). This helps avoid the natural questions that arise when similarities are detected at grading. **If you have any questions about what constitutes appropriate collaboration, or how to define what constitutes your own work, please see me or Ben.**

I cannot overemphasize the need for all students to monitor their own behavior. Assignments are structured such that you can receive feedback on your and your partner's understanding of the material. The consequences for plagiarism are appropriately severe.

Other Writing Resources

- HGSE Academic Writing Services: Gutman Library
- APA Online Tutorial: http://isites.harvard.edu/icb/icb.do?keyword=apa_exposed
- Writing Resources (including *Writing Like an Educator* Course and Reference Materials): <http://isites.harvard.edu/icb/icb.do?keyword=awrs&pageid=icb.page48297>
- Sign-up for Individual Sessions at the Writing Center: <http://www.appointmentquest.com/provider/2030159020>

Finally, some tips from last year's S-061 student cohort follow. These are the responses to my favorite question (#9) from our course evaluations. I have not edited or omitted any responses.

What advice would you give to students who are thinking of taking this course (about its level, the amount of work required, any prior training needed, ways to get the most out of the course, etc.)?

This is a great course, but it takes a lot of time. I spent 17-22 hours per week on this course. That said, you also get a lot out of it. It helps to have a strong stats foundation and familiarity with Stata (you can use other software, but Andrew only provides the commands for Stata.)

This is a really demanding course. It requires a strong time and cognitive commitment and one should be aware of it before enrolling. It has been a challenge but also one of the most enriching courses I have taken at HGSE.

High workload. Speak with students who have taken a few different statistics courses to help you pick which one is best for you.

This class is very time-consuming; take this course with a good understanding of the workload. Make sure you aren't taking any other workload-heavy courses in the same semester.

This course requires a substantial time commitment, but it's definitely worth the time if you can fit it into your schedule. You will learn a ton about psychometrics and get great insight into other types of statistical inference and modeling. Look over the syllabus; if the material this course covers seems like it's up your alley, you will love the course.

It is going to be a lot of work. Have a project in mind early on and choose something you care about because you will need the motivation. It is a very demanding course.

It's a lot of work (I'm only writing this so that Andrew shows my comment next year). But seriously, plan on a significant time investment

This is a really useful course, and the moderate workload is absolutely worth what you'll gain in terms of understanding test score data and achievement trends. I'd recommend it to any student studying education as seems irresponsible to go out in to the world as an education specialist and NOT know the concepts Andrew covers.

Math/algebra training prior to the class is helpful if you want to fully understand some concepts from the mathematical perspective.

I think this course is great if you're interested in understanding educational assessments and measurements related to them. I came in having had taken theoretical stats in undergrad but nothing applied at HGSE and the stats part was fine. I would recommend briefly reviewing the different tests (NAEP, MCAS) if you're not familiar with them already. The work outside of class is substantial, but having a small class size meant that I was more driven to finish everything anyways to follow along and participate. Working on assignments with a partner was new to me but ended up being extremely valuable. What helped me was setting aside 2 hours each day to work on problem sets/for general review. Also try to ask Andrew questions in person because e-mails didn't always get responses, but it wasn't hard to track him down since class was twice a week.
