Fall 2020   # Advising   UNM ABQ

MATH 1330 vs. MATH 1350

Starting fall 2020: the Mathematics department will offer two introductory statistics course. Both are good courses. They have different audiences.

- **Math 1350: INTRODUCTION TO STATISTICS.** A traditional introductory statistics course. *This course is designed for producers of statistics* or those who will deal with research results based on clinical trials. It focuses on randomness: random sampling and random assignment. Data from these sources will be used to infer and test claims about the properties of the population. This course provides a more rigorous foundation for those for those taking additional statistics courses or going to graduate school. See https://math.unm.edu/courses/materials/math-1350-introduction-statistics

- **Math 1330: STATISTICAL LITERACY**. A **new** non-traditional introductory statistics course. *This course is designed for the consumers of statistics.* This literacy course focuses on reading, interpreting the statistics in the everyday media. It critically evaluates these statistics and all of the influences on a statistic: confounders, assembly, randomness and error/bias. The focus is on observational studies and quasi-experiments both of which involve confounding and assembly more often than randomness and bias. This literacy course uses ordinary English to distinguish association from causation, and to describe and compare percentages and rates in statements, tables and graphs. This course uses basic arithmetic to take into account the influence of a confounder and see if a statistically significant result will become statistically insignificant or vice versa.

These courses are different (only a 30% overlap). So which majors should take which course?

- **Strongly recommended to take MATH 1350: Traditional Statistics**. *All students majoring in STEM, Economics and Psychology who are required to take a statistics course.*   These students will need this more-focused and rigorous foundation for subsequent courses and/or for grad school.

- **Strongly recommended to take MATH 1330: Statistical Literacy** All students in non-quantitative majors: majors that don't require a math class: English, History, Journalism, Political Science, Art, Music, Philosophy, Classics, Languages, etc.

- **Free to choose either MATH 1350 or MATH 1330.** Everyone else who is required to take statistics or needs to take a mathematics course.

MAT 1330 has been approved by the UNM Faculty Senate Curriculum Committee as a core course. It will be reviewed by the NM HED for General Education at their next meeting.

The Mathematics department plans to offer four sections of Statistical Literacy in Fall 2020. They need 200 students. Hopefully, advising and department chairs can make this happen!

For additional information, contact Milo Schield at SchieldMilo@UNM.edu

Advising
MATH 1330

Math 1330, Statistical Literacy, is a new course and it is a very different course when compared with traditional introductory statistics. This argument-based course has less than a 30% overlap in topics with those in traditional statistics. Thus, 70% of this course is new material. Much of this new material is taken from Epidemiology and Statistics II, and from statements, tables and graphs presented in the everyday media.

Catalog description:

Description: Participants will study social statistics encountered by consumers. Study statistics as numbers in context and as evidence in arguments. Study influences on statistics and techniques to mitigate these influences. Strong focus on confounding.

Goals: To help students think critically about statistics as evidence in arguments: to see the story behind the story. To help students see value in becoming statistically literate.

Objectives: Can use ordinary English to distinguish association from causation and to form arithmetic associations of numbers and ratios. Can identify and evaluate influences (confounding, assembly, randomness and error/bias) on a statistic. Can identify, evaluate and use various techniques to take control of – or control for – these influences. Can use ordinary English to describe and compare statistics as presented in statements, tables and graphs. Can evaluate the strength of evidence provided by statistics in the everyday media, press releases and journal articles.

Text: Required: *Statistical Literacy for Decision Makers* (1st ed) by Schield

Grading Scale [98≤A+≤100], [93≤A<98], [90≤A-<93], [87≤B+<90], [83≤B<87], [80≤B-<83], [75≤C+<80], [70≤C<75], [50≤D<70], [F<50], and F if you do not show up to take the final exam.

Grading: Chapter Exercises (7@3%) 21%; Forum Challenges (20) 20%; Project and Attendance 9%; Exams (2@9%) 18%; Final Exam 30%; Course Evaluations 2%.