

Teaching with Strands in Introductory Statistics



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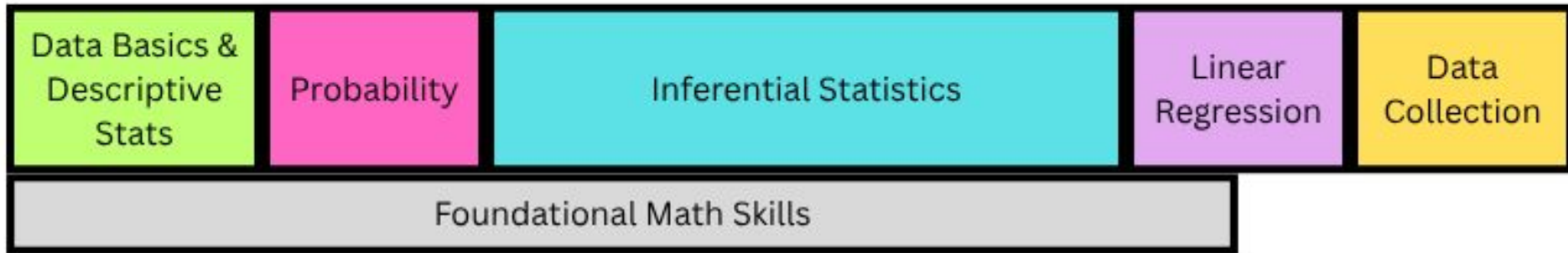


Regional public university of
~2500 students in Massachusetts

Applied Statistics

- Algebra-based introductory statistics
- Required for a wide variety of social, behavioral, and health sciences majors
- ~25 students per section
- No mathematical prerequisite
- One 50 min and two 75 min meetings per week

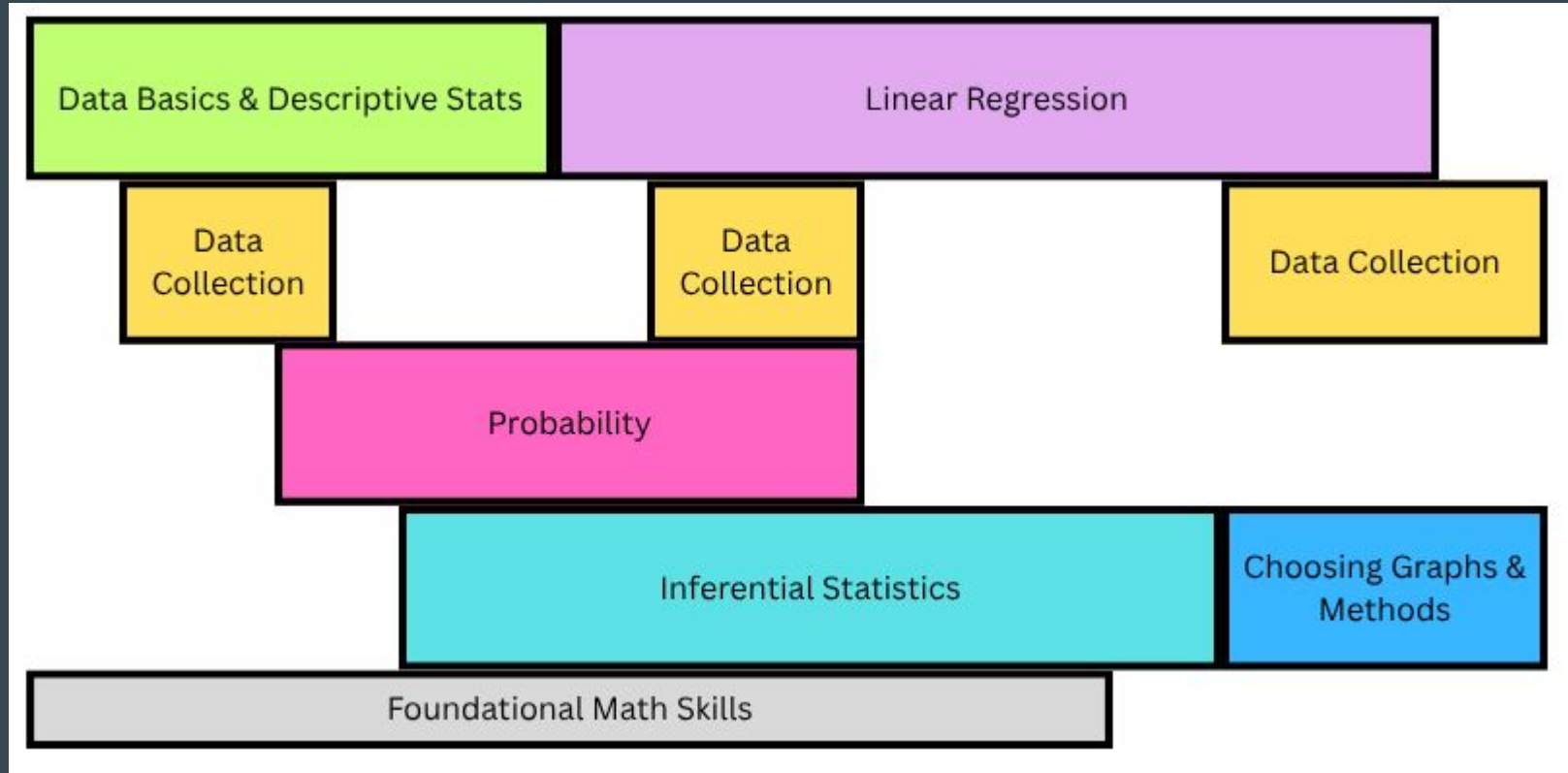
Former Course Structure: Linear Approach



Problem:

- Topics build on each other quickly
- Too little time for practice with a new idea or skill before students needed to use it as part of learning something else

New Course Structure: Parallel “Strands”



Do Now Practice with 1-2 previous topics
HW Followup or Graph Discussion
New Topic 1: Team Guided Inquiry Activity
Full Class Report-Out
Team Practice Activity
New Topic 2: Team Guided Inquiry Activity
Full Class Report-Out
Announcements
Exit Ticket Practice or reflection on day's topics

What does a class period look like?

Example 1:

- **Do Now:** describing histograms, frequency tables
- **HW Followup:** quartiles & percentiles
- **Practice** on reading histograms, percentiles, categorical vs numerical
- **Team guided inquiry activity** on measures of spread and visualizing measures of center
- **Team guided inquiry activity** on discrete probability distribution tables
- **Exit Ticket:** Main ideas, where they need more practice, quiz reflection

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Full Class Report-Out
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Exit Ticket Practice or reflection on day's topics

What does a class period look like?

Example 2:

- **Do Now** : confidence interval interpretation
- **HW Followup** : hypothesis writing
- **Team guided inquiry activity** on margin of error & confidence level
- **Practice** on hypothesis writing
- **Team guided inquiry activity** on probability in sampling distributions
- **Team guided inquiry activity** on shape of normal distributions
- **Exit Ticket** : confidence level & margin of error, sketching normal distribution, questions/confusions

Reflections: How it went & Moving forward

Positive themes in student reflections & performance:

- “Repetitive, but in a good way.” Kept getting practice with tricky ideas
- Topics never disappeared, so they didn’t feel like “one-offs” that weren’t related to other ideas
- Comparable success to previous semesters on standards-based quizzes, but with addition of two new skills!

Areas to improve:

- Pace was sometimes too fast
- In-class transitions could feel abrupt
- More planning about what to practice and when