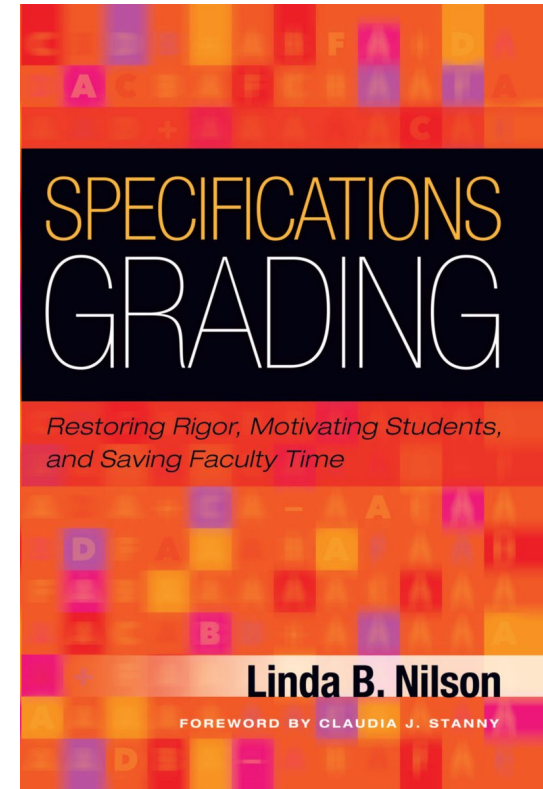


# Specifications Grading:

- Has improved my courses
- How it has revolutionized my courses
- And you should too!

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# History

- Anecdote
  - Asked upper-level student a basic chemistry question
  - Essential knowledge
  - I do not want students to pass my course with a “D” level understanding on everything!
- Chemistry education journal articles and conferences
  - Posters
  - Crowded talks
  - Testimonials
- Read the book: Specifications Grading by Linda B. Nilson

# From the book, part 1...

- Purposes of grading that specs grading fulfills!
  - Uphold high academic standards
  - Reflect student learning outcomes
  - Motivate students to learn
  - Motivate students to excel
  - Discourage cheating
  - Reduce student stress
  - Make students feel responsible for their grades
  - Save faculty time
  - Minimize student/faculty conflict
  - Give students feedback they will use
  - Make expectations clear
  - Foster higher-order cognitive development and creativity
  - Assess authentically
  - Have high interrater agreement
  - Be simple

## From the book, part 2...

- Pass/Fail grading on assignments/tests/bundles/modules
- Provide clear specifications (specs) for what is satisfactory
- Specs reflect standard of “B” level work
- Students can revise unacceptable work or get “tokens”
- Higher course grades are possible with mastery of more content
- Bundles or modules tied to learning outcomes

# Design of Organic Chemistry

- Template from another chemistry educator
- Point-building (could also require a certain number of objectives)
- 41 Total course objectives
  - 14 Essential
  - 27 Non-Essential
- Assignment for each objective
  - Quizzes for most
  - Lab reports
  - Homework

# Design of Organic Chemistry

- Quizzes and other Essential objectives are graded Pass-Fail
  - For Organic I, 45 students x 28 quizzes = 1260 quizzes!
  - Grading is easy! 80% = passing
  - I have at least four versions of each quiz
  - Students can re-take quizzes on “Make-up” days or by appointment
- Point-building example
  - All Essential objectives = 45 points
  - Maximum Non-Essential = 30 points
  - Midterm and Finals = 25 points

# Reflections

- Student response very positive (after initial confusion)
- A lot of work up-front
  - Each course objective was written in detail so students know exactly what is on each quiz
  - I tried to have at least four versions of quizzes written before semester started
- Currently, mid-term and final are not pass/fail, but will likely change that. I want them to take it more seriously.
- Will likely add some summative Essential quizzes throughout the semester
- More one-on-one interaction with students
- I will likely convert all of my courses to this type of grading!
- Do it!