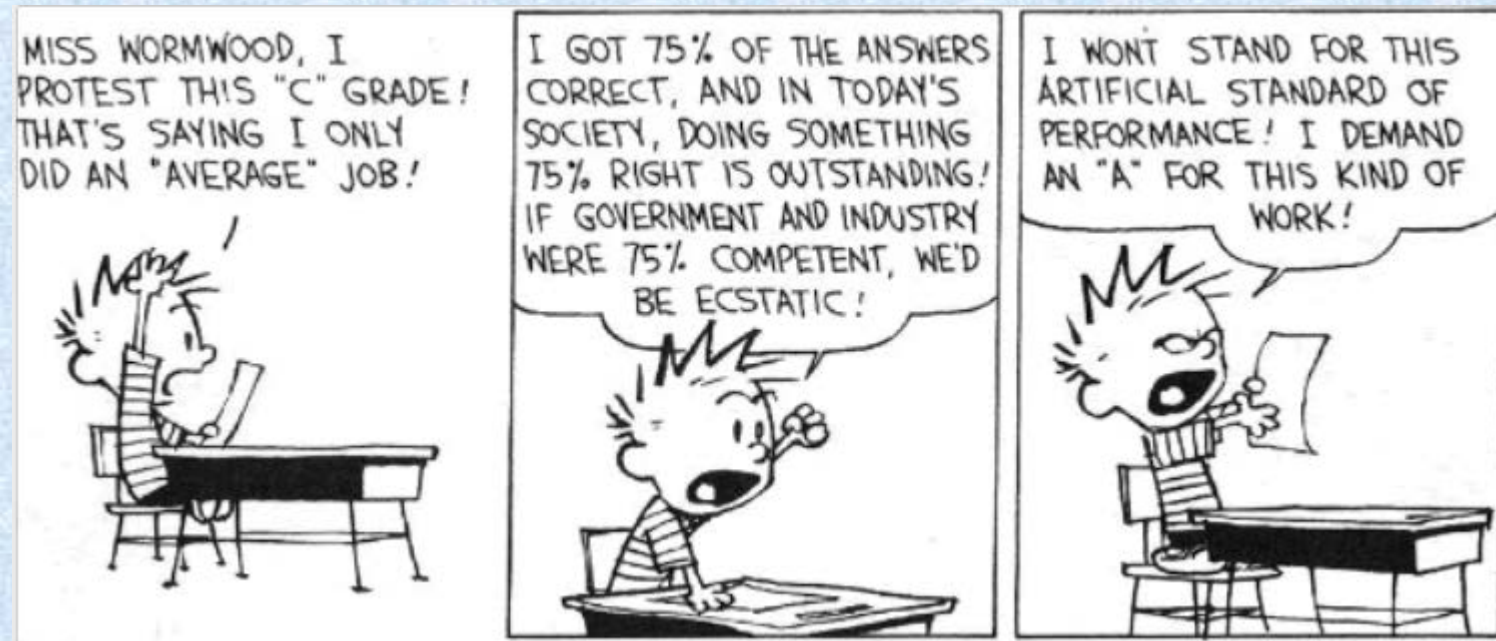# Making Grades Meaningful with
Specifications Grading

Dr. Rebecca Kelly

Associate Teaching Professor in Earth and Planetary Sciences

Director of the Environmental Science and Studies Program

What Do Grades Mean?

Problems with Traditional Grading Systems

Overall lack of clarity about what grades mean, plus…

For students:

- **Warped objectives** – Grade-focused not learning-focused mindset

- **Anxiety** – Few penalty-free opportunities to learn from mistakes, fears that grading may be highly subjective

Grade: C-
Timmy, your thesis was good, but you did not back it up with evidence from the text. Let's meet to talk about ways of improving this paper.
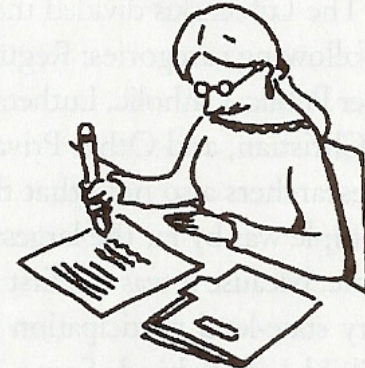
Grade: C-
Timmy, your thesis was good, but I don't like you. No matter how hard you work in this class, you'll never do well… because I don't like you.
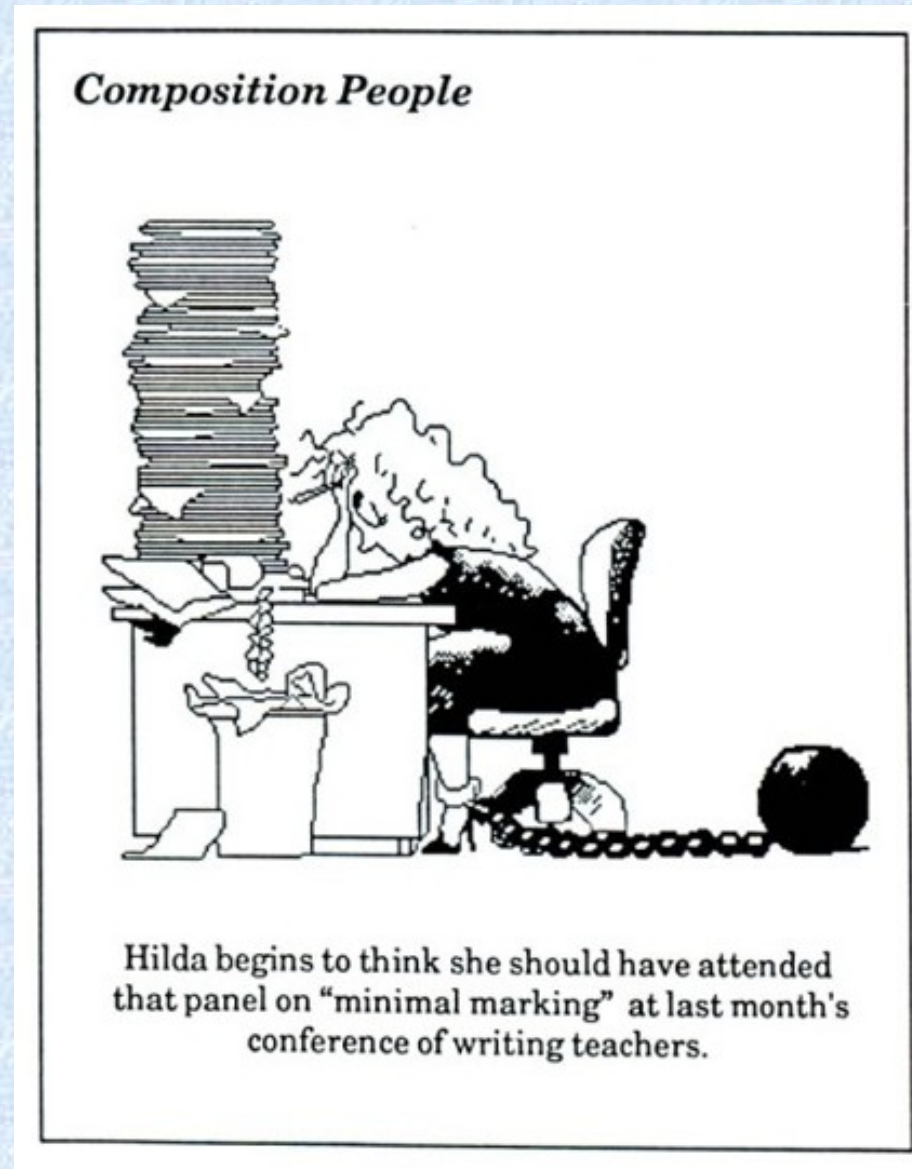
YEGROS

WHAT TEACHERS WRITE

WHAT STUDENTS READ

https://mysteriesandmanners.wordpress.com/2014/02/17/grading-papers/

Problems with Traditional Grading Systems

For faculty:

- **Time sink** – Evaluating sloppy work, agonizing over points taken off, writing feedback students will never use

- **Energy drain** – Haggling with students over points

Clear learning goals and grading rubrics can help, but they are often not enough.

Composition People

Hilda begins to think she should have attended that panel on "minimal marking" at last month's conference of writing teachers.

What is Specifications Grading?

A system that:

- Directly links course grades to achievement of learning goals

- Encourages students to learn from their mistakes

- Saves faculty time and energy by simplifying grading

What's not to like??

Fundamentally with specs grading…

More learning = Higher grade

- Course learning goals are clearly spelled out
- Learning goal achievement is measured by specific assignments
- Assignments are graded pass/fail based on mastery of linked learning goal(s)
  - For rigor, the pass threshold should be about a B or better
- There are multiple opportunities to achieve each learning goal
  - Students can re-do failed assignments or attempt several assignments linked to a particular goal
- Course grade is determined by the number of learning goals mastered
  - Measured by a student passing a particular bundle of assignments

Example Course: Introduction to GIS

- Provides a broad introduction to the principles and practice of *geographic information systems* (GIS) and related tools of geospatial analysis

- Includes both a lecture and lab component

- Lab involves learning to use ArcGIS software to make attractive and useful maps and perform data analysis

Percent of Farms Run by Women
- 0 - 10
- 11 - 20
- 21 - 30
- 31 - 40
- 41 - 56
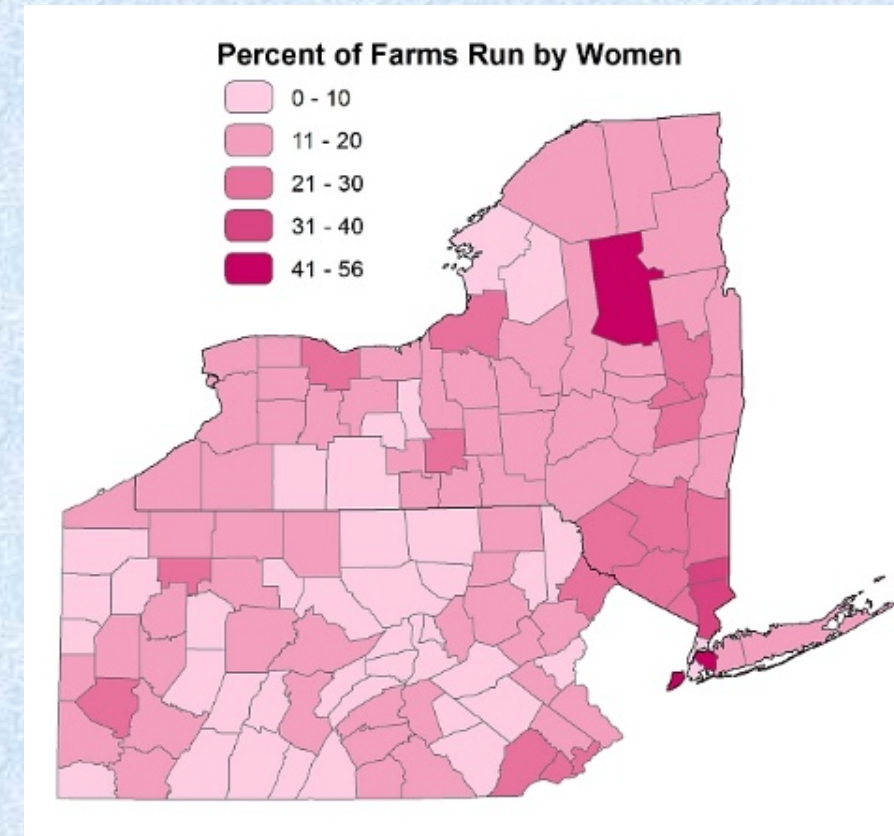
Grading Policies

- All assignments are graded on a **satisfactory/unsatisfactory** basis except for the two exams on lecture material.
  - Rubrics and examples are provided that clearly define the quality of work required to achieve a satisfactory mark
  - The exams are scored in the typical way
- Each student is given **three tokens** that allow them to revise an assignment and have it regraded or to turn it in up to a week late without penalty
- To achieve a particular final course grade, a certain **bundle** of assignments must be completed successfully, demonstrating achievement of particular learning goals

Learning Goals ⟷ Assignments

By the end of this course, students will demonstrate the ability to:	Related Assignments
1) Explain the basic principles and concepts of cartography and GIS.	material responses, HLM responses, exams 1 and 2
2) Describe the range of applications of GIS and provide examples of its use in a variety of disciplines.	GIS articles
3) Critique map layouts with regard to cartographic standards, effectiveness of communication, and design aesthetics.	HLM responses, map critiques
4) Construct map layouts in ArcGIS that meet cartographic and aesthetic standards and convey information effectively.	lab tutorial 10 & Pro 4, projects 1-3
5) Acquire, manage, and display spatial data about the people, places, and environments on Earth's surface.	lab tutorials 3-9 & Pro 1, lab test 1, project 1
6) Select and link spatial features in ArcGIS according to their attributes and characteristics.	lab tutorials 15-17, lab test 2
7) Analyze different types of spatial data, particularly in vector file format, using ArcGIS software.	lab tutorials 18-19 & Pro 3, lab test 2, project 2
8) Create and edit new datasets in ArcGIS.	lab tutorials 11-13 & Pro 2, project 3

Grade Bundles

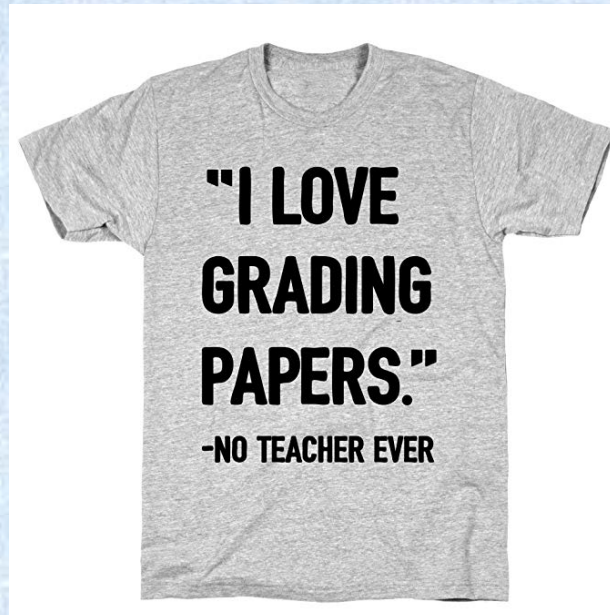| Course Grade	A	B	C
Assignments (total #)	# Completed Satisfactorily		
Exams (2)	≥90% average	≥80% average	≥70% average
Lab Tests (2)	2	2	1
Lab Projects (3)	3	2	1
Lab Tutorials & Pro Course (20)	20 (Ch. 3-13, 15-19; Pro 1-4)	16 (Ch. 3-10, 15-19; Pro 1,3,4)	13 (Ch. 3-10, 15-17; Pro 1,4)
HLM Responses (3)	3	2	1
GIS Articles (2)	2	2	1
Map Critiques (2)	2	1	1
Material Responses (14)	11	9	7
Objectives Achieved	#1-8	#1-7	#1-5

Results

- Students are typically a bit anxious at first but quickly settle into the new system and generally like it because:
  - Expectations are CLEAR
  - Failure does not count against them; it is an opportunity for growth
- Grading is quick and easy because any work that does not follow directions or is less than optimal is simply unsatisfactory
- The quality of student work is very high
  - No credit for sloppy work. To quote Yoda: "Try not. Do… or do not. There is no try."
  - They are motivated to seek faculty help and feedback before turning in a complicated assignment so that they can hoard their tokens
- The course grade a student earns is a true measure of their skill level in GIS

Questions?

Contact Rebecca at rkelly36@jhu.edu

Or read the book on it:

Nilson, Linda. B. (2015) *Specifications grading: Restoring rigor, motivating students, and saving faculty time*. Sterling, Virginia: Stylus Publishing, LLC.