

# Designing a mastery-graded course

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Based on a forthcoming paper by Emily Cilli-Turner (University of La Verne, La Verne CA), Justin Dunmyre (Frostburg State University, Frostburg MD), Thomas Mahoney and Chad Wiley (Emporia State University, Emporia KS).

## What learning objectives will I measure?

*Use department course objectives, past assessments, personal goals, etc. as sources to create objectives. You may want objectives in multiple categories (skills, process, specs). Think about which category each fits into and try to avoid mixing too many together.*

- ❑ **What skill-based objectives must students meet?**  
These are computational skills, at low levels of Bloom's.
- ❑ **What broad/process-based objectives must students meet?**  
These objectives involve analysis, synthesis, selecting methods, problem-solving, etc.
- ❑ **What other requirements must students meet?**  
"Specifications" describe characteristics of a successful submission and may address things like writing style. They work well with holistic evaluation of proofs or projects.

## How will I define and measure mastery?

*You may need different measurements for skills vs. process vs. meeting specifications.*

- ❑ **What types of assessments will you use to measure mastery?**  
Examples: Individual vs. group, in-class vs. take-home, projects or portfolios (these should usually involve specifications).
- ❑ **How will the final exam, if any, be involved?**  
Examples: One last opportunity for mastery; required "recertification" on core objectives; adjust final grade up or down by one step based on performance.
- ❑ **How will you communicate student progress on an assessment?**  
Example rubrics: Pass/Not Yet; EMRN; written feedback only until mastered.
- ❑ **What does "mastered" mean for each type of objective?**  
Examples: Demonstrate mastery of an objective once vs. multiple times (possibly on specific types of assignments, such as once on an exam and once on homework); demonstrate a "trajectory" such as "2 most recent attempts are both M or above".
- ❑ **How will you communicate overall progress?**  
Examples: One column for each objective in your LMS gradebook; record progress on paper or electronic sheets for each student; have students keep track of own progress.

## How will I translate student progress into a grade?

*Consider bundling/"leveling up" requirements ("do x for a D, x and y for a C...") or setting grade lines for the percentage of possible progress ("Master 90% of objectives for an A"). You can use mastery grading only on exams and calculate a percentage for an existing weighted grading system ("The percentage of objectives mastered on exams counts as your exam grade.")*

- ❑ **What must a C student do?**  
Are there things students must do, or else they should not be allowed to pass the class? Make a list! Use these to determine bundle or percentage cut-offs for earning a C.
- ❑ **What must an A student do?**  
What marks a student's progress as exceptional? Set these bundle requirements or cut-offs next.
- ❑ **Determine B as in-between C and A, do similar for D.**  
Don't be afraid to set high expectations. Students rise to meet them!
- ❑ **How will you decide on +/- or half-grades?**  
Example: Earn a + if students are within one objective of reaching the next higher grade.
- ❑ **What other twists must you consider?**  
Examples: Are there points-graded parts? Online homework? A common final?

## How will I add flexibility for my students and myself?

*Flexibility is essential. Students need room to try, fail, and learn without penalty. However, you also need to set limits to ensure you're not overwhelmed by reassessments.*

- ❑ **When are reassessments allowed, and what form will they take?**  
Examples: In-class reassessment days where students can request specific objectives; during office hours; only on regularly scheduled exams or quizzes.
- ❑ **How often are reassessments allowed?**  
Examples: On specified days only; limit frequency or number of total attempts; provide ways for students to earn opportunities. Warning: Limit reassessments, or you will be overwhelmed!
- ❑ **Will you use a token economy, engagement credits, or other way for students to "break rules"?**  
Examples: Students may have, or can earn, tokens to: move due dates, reassess again, etc.

## What is my buy-in plan?

*Students often fear mastery grading because it's different than what they're used to. Administrators or colleagues may be concerned about implications for DFW rates, rigor, and uniformity with other sections.*

- ❑ **How will you communicate your expectations to students?**  
Don't try to explain everything at once. Consider having students grade a sample solution or identify the objectives addressed in a solution.
- ❑ **How will you convince students to buy in to your system?**  
Be relentlessly positive! Frequently point out concrete ways the system is beneficial.
- ❑ **How will you convince colleagues/administration to support you?**  
Here is a list of resources to help: <http://gvsu.edu/s/OVy> (that's a zero)  
An upcoming workshop at GVSU: <http://gvsu.edu/s/14E>