**Mastery Learning philosophy:**

Providing the necessary time and appropriate learning conditions allows nearly all students to reach a high level of achievement.

**Problems to be solved – change the lows to highs and the highs to lows:**

* Students’ end-of-course comprehension of statistics – low
* Students’ enthusiasm for course – low
* Students’ engagement with content – low
* Students’ ability to apply course concepts – low
* Course attrition rates – high
* Instructor frustration – high
* Students’ angst and stress – high

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| *Problem* | *Evaluation Method* | *Results* |
| End of course comprehension low | Quantitative: Final Comprehensive Exam, course grades | TBD – December 2017 |
| Enthusiasm for course low | Qualitative – Focus group, 1:1 Check-ins | Enthusiasm high |
| Engagement with content low | Qualitative – Focus group, Mastery projects | Engagement high |
| Application of concepts low | Qualitative - Mastery projects | Application high |
| Course attrition rates high | Quantitative: Comparison to previous courses, end of semester enrollment #s | TBD – December 2017 |
| Instructor frustration high | Qualitative – 1:1 Check-ins, Personal journal | Frustration low |
| Students’ angst & stress high | Qualitative: Focus group, 1:1-check-insQuantitative: Stress test evaluations | Angst & stress low\* |

\*Most interesting part of the data analysis. In the mastery learning environment, students’ frustration levels were more elevated and “buy-in” was low for the first 3 weeks of the semester. Only after the first check-in did students’ stress, frustration and angst lower. Additionally, their enthusiasm and engagement increased.

**Student quotes from PSY 230 presenters at the 2017 Exposition Fair:**

“I took a statistics class and dropped it halfway through. I was told to put numbers in and calculate, but I had no idea what I was doing. Then I found out I had to take a statistics class to get into my program and I really didn’t want to take this course, but – and I never thought I would ever say this – I love statistics.”

“Having had this class, I feel like people can’t fool me because I know what I’m looking at and I understand what I am reading in the papers and in articles. I feel like I have power now.”

“I dropped out of a statistics class last semester, because it takes me longer to learn and the class seemed to go so fast. In this class, I didn’t feel rushed or pressured and I got to show how I was learning. The feedback really helped me understand what I was doing wrong and working with my group let us explain how we were all thinking about statistics. I really understand what I’m doing now.”

“I was in a class where the students were always angry and they took it out on the professor. I took this class again because I really wanted to learn statistics. This mastery learning has really helped me learn statistics – I can read these journal articles now and understand what all the symbols mean. This class compared to the other class – there is no comparison – this class is fun and everyone has a good attitude.”

“I think mastery learning should be done in any class – especially the classes where you really need to know the content for your career. Like, for me, I’m going into nursing and mastery learning would have really helped me in anatomy & physiology. I think I would really be a better-prepared nurse if I had had the time and the feedback to improve my learning, just like we had in this class. I think Estrella should be a mastery learning college.”

**Mastery Learning course elements for PSY 230/231:**

1. **“Not yet” grades** – Students submit assignments by due date, instructor provides feedback, students receive “0” and may resubmit until satisfactory understanding is demonstrated, assignment grade changed to “100” when comprehension/accuracy shown
2. **3 Individual check-ins** during semester – Prior to meeting with instructor during office hours, students submit a check-in sheet which states:

Prior to in-person meeting with professor, upload a document that contains:

* 1. 3 items you completely understand with supporting evidence.
	2. List any items you do NOT understand and all of the actions you have undertaken to try to understand the items/content.
	3. An evaluation of your learning - if you were to give yourself a grade, what grade would you assign and why? (Provide supporting evidence for the grade.)
1. **Completion of 4 mastery learning projects** during semester. Directions for the projects are:

This class has 5 "statistics projects" which are used to evaluate your mastery of statistical analysis:

* Project 1: Descriptive Statistics
* Project 2: T-test
* Project 3: ANOVA
* Project 4: Correlation
* Project 5: Chi-square

Data sets are provided for each project and every student is required to complete the data analysis of all datasets within the project.

To demonstrate mastery, students will use one of the 4 methods (Excel, SPSS, Online Calculator, or hand calculations) and document their analysis process.

Individuals choose and design their documentation method - a 5-minute screen capture, a 5-minute video, an infographic, etc.

The focus of the project is to "teach another student how to do the analysis" and "explain WHY the statistical test was selected and its usefulness".

The critical inquiry rubric is used to evaluate student projects and for students to assess their own learning. 1042-critical-inquiry-rubric.docPreview the documentView in a new window

Students may use other sources for guidance and ideas, but the final project is unique to the student/group.

The projects are similar to the communication students' project last year, in that students determined what content was most important to share with other students. https://vimeo.com/199365278 (Links to an external site.)Links to an external site.

All students are required to complete project 1 (descriptive statistics). Students will complete all data analyses for every project, but choose 3 of the 4 projects to complete a mastery demonstration.