UC 12144 12F

CBM003 ADD/CHANGE FORM

☒ Undergraduate Council ☐ New Course ☒ Course Change Core Category: Math/Reason Effective Fall 2014	or	Graduate/Professional Studies Council ☐ New Course ☐ Course Change Effective Fall 2014

1. Department: PSYC College: CLASS

APPROVED OCT 02 2013

2. Faculty Contact Person: Suzanne Kieffer Telephone: 3-8504 Email: kieffer@uh.edu

3. Course Information on New/Revised course:
   - Instructional Area / Course Number / Long Course Title:
     PSYC / 3301 / Introduction to Psychological Statistics
   - Instructional Area / Course Number / Short Course Title (30 characters max.)
     PSYC / 3301 / INTRO PSYCH STATS
     - SCH: 3.00 Level: JR CIP Code: 4227080001 Lect Hrs: 3 Lab Hrs: 0

RECEIVED OCT 12 2012

4. Justification for adding/changing course: **To meet core curriculum requirements**

5. Was the proposed/revised course previously offered as a special topics course? ☐ Yes ☒ No
   If Yes, please complete:
   - Instructional Area / Course Number / Long Course Title:
     ____ / ____ / _____
   - Course ID: _____ Effective Date (currently active row): _____

6. Authorized Degree Program(s): BA/BS
   - Does this course affect major/minor requirements in the College/Department? ☐ Yes ☒ No
   - Does this course affect major/minor requirements in other Colleges/Departments? ☐ Yes ☒ No
   - Can the course be repeated for credit? ☐ Yes ☒ No (if yes, include in course description)

7. Grade Option: Letter (A, B, C ...) Instruction Type: lecture ONLY (Note: Lect/Lab info. must match item 3, above.)

8. If this form involves a change to an existing course, please obtain the following information from the course inventory: Instructional Area / Course Number / Long Course Title
   PSYC / 3301 / Introduction to Psychological Statistics
   - Course ID: 40529 Effective Date (currently active row): 82210

9. Proposed Catalog Description: (If there are no prerequisites, type in "none".)
   Cr: 3. (3-0). Prerequisites: MATH 1310. Description (30 words max.): Introduction to statistical principles and strategies for research on behavior.

10. Dean's Signature: _____ Date: 10/8/12

    Print/Type Name: Sarah Fishman

REQUEST FOR COURSES IN THE CORE CURRICULUM

Originating Department or College: Psychology, CLASS
Person Making Request: Suzanne Kieffer Telephone: 3-8504
Email: kieffer@uh.edu
Dean's Signature: ____ _____ Date: 09-30-12

Course Number and Title: PSYC 3301: Introduction to Statistics
Please attach in separate documents:

X Completed CBM003 Add/Change Form with Catalog Description
X Syllabus

List the student learning outcomes for the course (Statements of what students will know and be able to do as a result of taking this course. See appended hints for constructing these statements):
*Students will be able to use statistical tools to help them understand the meaning and limitations of statistics that appear in published research articles or in newspaper and magazines.
*Students will be able to use statistical tools to help them to develop and analyze their own research projects.

Component Area for which the course is being proposed (check one):

☐ Communication
☐ Mathematics
☐ Language, Philosophy, & Culture
☐ Creative Arts
☐ Life & Physical Sciences
☐ American History
☐ Government/Political Science
X Social & Behavioral Science
☐ Component Area Option

Competency areas addressed by the course (refer to appended chart for competencies that are required and optional in each component area):

X Critical Thinking
X Communication Skills
X Empirical & Quantitative Skills
☐ Teamwork
X Social Responsibility
☐ Personal Responsibility

Because we will be assessing student learning outcomes across multiple core courses, assessments assigned in your course must include assessments of the core competencies. For each competency checked above, indicated the specific course assignment(s) which, when completed by students, will provide evidence of the competency. Provide detailed information, such as copies of the paper or project assignment, copies of individual test items, etc. A single assignment may be used to provide data for multiple competencies.

Critical Thinking:
Students will write a 1-2 page paper that asks them to evaluate a psychology research article in light of a statistical technique that they have learned in the class.

Sample paper assignment:
The target article describes a survey study in which university students are asked to state which candidate they would vote for in the next presidential election. What are the findings? Evaluate the validity of those findings using criteria of survey design, sample size, and confidence interval. Suggest ways in which the study could be improved.

Communication Skills:
In the paper described above, students will demonstrate their ability to communicate effectively.

Empirical & Quantitative Skills:
In the paper described above, students will demonstrate their ability to understand and use their empirical and quantitative skills.

Teamwork:
Click here to enter text.

Social Responsibility:
In the paper describe above, students will demonstrate their their knowledge of social responsibility by being able to explain the strengths and limitations of studies.

Personal Responsibility:
Click here to enter text.

Will the syllabus vary across multiple section of the course? X Yes ☐ No
If yes, list the assignments that will be constant across sections:
The assigned paper will remain constant across sections.

Inclusion in the core is contingent upon the course being offered and taught at least once every other academic year. Courses will be reviewed for renewal every 5 years.

The department understands that instructors will be expected to provide student work and to participate in university-wide assessments of student work. This could include, but may not be limited to, designing instruments such as rubrics, and scoring work by students in this or other courses. In addition, instructors of core courses may be asked to include brief assessment activities in their course.

Dept. Signature

Psychology 3301
Introduction to Statistics

Professor: Christiane Spitzmüller, Ph.D. (christianes@gmail.com)
Teaching Assistants: Candice Perks and Jing Zhang (Jing: xintianweng62@gmail.com, Candice: clp86@nau.edu)

Course website is Blackboard.

Office:	Heyne Building, Room 123b
Class meeting:	Early afternoon class 1 pm – 2.15pm, and late afternoon class 4pm to 5.15pm
Office Hours:	Christiane: Please send an email for an appointment, Candice and Jing: TBD on the first class day
Classroom:	Melcher Hall 129 (1pm class) and Melcher Hall 138 (4pm class)

Quick Reference:

- Purpose: Learn to apply descriptive and inferential statistics.
- Required Text: Essentials of Statistics for the Behavioral Sciences (4th Edition or later) by Gravetter and Wallnau. The most current edition is the 8th edition. An older version of the textbook will be fine, but please make sure you have one by no later than the first class day of the second week of class.
- Materials: You need to bring your Essentials of Statistics book and a hand calculator to every class and to all tests and exams. You also need to bring your clicker (officially called your turning point response card) to class every time since it will be used for quizzes every class session.

Learning Outcomes:

1. Students will be able to use statistical tools to help them understand the meaning and limitations of statistics that appear in published research articles or in newspaper and magazines.

2. Students will be able to use statistical tools to help them develop and analyze their own research projects.

Course summary and objectives:

The social world- including individuals, families, society, attitudes and emotions – is variable, complicated, and interrelated. As social scientists, we examine and measure aspects of the social world in order to understand it. When we use numeric measurements we generate too many numbers to be able to make sense out of without some helpful tools. Statistical analysis provides the tools that help us understand the variability and inter-relatedness of the social world as we measure it using numbers.

This course can help you understand how to use some of these statistical tools. The goal is not to become a statistician or mathematician, but rather to become a sophisticated user of techniques that have been developed and refined by statisticians and mathematicians. Being a sophisticated statistics user will help you develop and analyze your own research efforts. Perhaps more importantly, being a sophisticated statistics user will help you understand the meaning and limitations of other people's statistics that appear in published research articles or in newspapers and magazines. Statistics are misused on a daily basis both intentionally and unintentionally, particularly in the popular press. After taking this course you can figure out whether and when you are being manipulated!

Note that this class will provide you with the basic knowledge needed to complete consecutive classes successfully. More advanced statistics and psychology lab classes will require you to apply your statistical knowledge to research problems.

Course Text:

We will use Essentials of Statistics (4th Edition or later) by Gravetter and Wallnau. This book presents technical details accurately but also describes the context in which statistics can and should be used. We will not examine every detail that the book presents, but you may find benefits from reading all of the notes, sidebars, and other supplementary materials the book contains. In particular, the book contains study hints and learning checks that might be very helpful for you, especially if it has been a while since you took your last math or science course.

Attendance Policy:

The class meets twice each week and will provide essential information not available in the text. During class meetings we will discuss course material and perform illustrative experiments or exercises. There will be a short clicker quiz at the beginning of every class. For these reasons, attendance at the lecture is highly recommended. Tardiness or absence from class meetings may adversely affect your grade because class participation provides the experiential learning component of the course that cannot be obtained from reading the textbook or reviewing class notes. In preparation for the weekly clicker quizzes, we will provide you with a homework sheet that you can work through, its content will resemble the content of the quizzes.

Student Assessment:

This course provides knowledge and practice in the use and interpretation of basic descriptive and inferential statistics. To provide this practice and to put this knowledge to work, class members will complete a brief quiz at the beginning of every class. The quizzes will account for about half or a bit more of your grade. The remaining part of your grade will accrue from the three tests that will be administered throughout the course.

Throughout the semester, the two lowest quiz scores will not be counted towards your grade. Thus, you can either completely miss two quizzes or you can have your lowest scores deleted to enhance your grade.

Class structure:

Classes will typically consist of a brief overview, some questioning, and an in-class exercise or activity. Active, vigorous participation in each of these aspects of the class will be crucial to your ability to perform at a high level on homework assignments or the in-class problems.

Academic Misconduct:

Please read the attached sheet on academic honesty for complete details on policies concerning academic misconduct, and sign and return the second page of the handout. Any method of cheating on an in-class, individual assessment will cause a failing grade on that assessment and may also result in a failing grade for the course in accordance with university policy.

Students with Disabilities:

The Center for Students with DisABILITIES (http://www.uh.edu/csd/index.html) provides academic support services for all UH students who have any type of health impairment, learning disability, physical disability, or psychiatric disorder. Individuals wishing to find out more about these services should contact CSD in Room 305 of the Student Service Center (or call 743.5400/voice 749.1527/TDD). Students requesting reasonable and necessary accommodations for this course (including testing modifications) need to provide appropriate documentation from the Center for Students with DisABILITIES within the first week of class.

Semester Sequence:

This sequence is purposefully vague on the dates. We will work at the right pace so that we consider each topic thoroughly and so that we don't lose anyone who is committed to the class. As a result we may not examine absolutely everything described here. I will assign the appropriate range of reading in each class.

Week	Questions	Reading
1	Why learn about statistics? What can we do with statistics? What is the difference between descriptive and inferential statistics? How do we measure the world with numbers? What mathematical techniques and symbols will be needed?	Chapter 1
2	How can we group big sets of numbers together to make sense out of them? How can we graph collections of measurements? What is normality? What are common deviations from normality?	Chapter 2
3	How can we summarize large groups of numbers? What is central tendency? How do choices of central tendency statistics change with different shaped distributions?	Chapter 3
4	Why doesn't central tendency tell the whole story about a group of numbers? How do we characterize	Chapter 4

	variability? How does the standard deviation work?	
5	How can we compare scores that come from different distributions? If a distribution is normal, what can we learn about the position of a score within that distribution? How does probability connect with the normal distribution?	Chapters 5 and 6
6	What happens when we sample a small set of numbers from a larger population? Does the small set of numbers have similar central tendency and variability to the population? How far off is it?	Chapter 7
7	Given what we know about sampling, how can we make decisions about research hypotheses? When can a directional test be used instead of a non-directional test?	Chapter 8
8	What happens when we don't know much of anything about the population? How can we make hypothesis decisions when the variance of the population is unknown?	Chapter 9
9	What happens when we don't know anything at all about the population? How do we use and analyze a control group?	Chapter 10
10	Can we get subjects to be their own control group? How does this change the way we analyze the data?	Chapter 11
11	Instead of accepting or rejecting the NULL hypothesis, what if you want to know the range within which the population mean falls? Why does a confidence interval give more information that a NULL hypothesis test?	Chapter 12
12	What if we have more than two groups to compare?	Chapter 13
13	Instead of looking at groups of subjects, what if we want to examine things at the individual level? How can we quantify the association between two variables? How can we predict the values of one variable from another variable?	Chapter 15
14	How can we analyze voting data? How can we determine if category membership occurred by chance?	Chapter 16
15	Review for final	No reading

How to learn a lot, get a good grade, and have fun

The course has a structure that may be unfamiliar to you: Virtually everything is cumulative, so whatever new material you will learn sits on top of everything you learned before. Unlike some courses (e.g., survey courses) every topic in this course is dependent on the previous topics. Think about what this means. If you fall behind or get lost, you threaten your ability to understand any and all of the future material!

One implication is that it is important to maintain your health so that you don't miss classes. The people who get the least sleep and the most colds and flu tend to get the worst grades in part because they miss the most classes. This is the single most important message on this syllabus: You can't get a good grade in this class unless you come to all of the classes!

Another implication is that you will have to try to be an "activist" learner. Don't let the course "happen to you." Instead, take control of your learning in the following ways:

- Quickly read the appropriate pages in the text prior to class. Just get the basic ideas going in your brain. Definitely don't worry about memorizing the book.
- Write down any questions you have about the text as you read it for the first time. Ask these in class if we don't seem to be answering them.
- Participate in class! You absolutely can't learn very much if you are passive! Ask a lot of questions. There are no dumb questions in this class! The person next to you is probably wondering the same thing you are. Expect lots of questions from me.
- Reread the text portion **right after the class where that topic was discussed!!!** It is absolutely, totally ***critical*** to do these things as soon as possible after the class. Take notes on what you read - especially if it reinforces classroom material.
- Rewrite your notes from class. Nothing breeds success in statistics like a well organized, detailed, tidy notebook.
- Bring any lingering questions to office hours: Don't let misunderstandings build into outright confusion. Don't forget that part of your tuition pays to have us answer your questions. Only geniuses and idiots don't go to office hours! Geniuses don't need to, and idiots don't even think of it. The rest of us really need to ask a lot of questions and talk together to figure out problems and solutions. If you're not getting an A or a B, then we should see you in office hours pretty much every week. No joke
- Use your feedback wisely: Corrections on homework and in-class problems provide the information needed to improve subsequent performance.
- Don't skip ***any*** classes.

Appendix 2: Grading Details

The course letter grade will derive from a numeric system of 200 points where 180-200 equals 'A', 160-179 equals 'B', and so forth. Quizzes will carry a value of 10 points each. Tests will account for about 30 points, and the final examination will count 40-65 points.