

Request for Curriculum Council Action

To: Dean of Curricular & Faculty Development, Thorpe Center

Date Submitted: _____

(Please submit 1 double-sided copy of your proposal.)

From: (Name) _____

(Department) _____

Email Address: _____

1. **Written Rationales:** Attach a written rationale, following the guidelines in the *Curriculum Council Handbook*, which is posted on <https://www.iwu.edu/thorpe-center/cc.html>. Please note that the CC will not evaluate incomplete proposals. To expedite consideration of your submission, you must read and follow the guidelines carefully.

2. Proposed Action (Please check all that apply):

	Title	Number	Units
☐ New Course	_____	/ _____	/ _____
☐ Reinstatement of Previously Approved Course	_____	/ _____	/ _____
☐ Deletion of Major/Minor/Concentration	_____	/ _____	/ _____
☐ Shared Curriculum for Existing Course	_____	/ _____	/ _____
☐ Change title from to	_____	/ _____	/ _____
☐ Change number from to	_____	/ _____	/ _____
☐ Change prerequisites from to	_____	/ _____	/ _____
☐ Summer Term Course	_____	/ _____	/ _____
☐ New Major/Minor	_____	/ _____	/ _____
☐ Revised Major/Minor/Concentration	_____	/ _____	/ _____
☐ Other (please specify)	_____	/ _____	/ _____

3.a. If you are requesting Shared Curriculum credit, please check the category:

- | | | |
|---|---|--|
| ☐ Analysis of Values | ☐ Gateway Colloquium (see 9b. below) | ☐ Life Science Lab |
| ☐ The Arts | ☐ Intellectual Traditions | ☐ Physical Science Issues |
| ☐ Contemporary Social Institutions | ☐ Literature | ☐ Physical Science Lab |
| ☐ Cultural and Historical Change | ☐ Second Language | ☐ Physical Education |
| ☐ Formal Reasoning | ☐ Life Science Issues | ☐ Fitness |

3. b. Please check the flag(s), if any, you are seeking

- | | | |
|--|---|---|
| ☐ Writing Intensive | ☐ Global Diversity | ☐ U.S. Diversity |
|--|---|---|

3. c. Does this course already carry Shared Curriculum credit? ☐ Yes ☐ No

If yes, which category/flag? _____

Will the existing category/flag remain? ☐ Yes ☐ No

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3. d. In what way will you assess how this course has met the goals of the Shared Curriculum category and/or flag(s) for which you are applying?

4. Please insert here the proposed catalog course description. Course descriptions should be limited to no more than 50 words. The description must include (a) title; (b) prerequisites; (c) Shared Curriculum category and/or flag; and (d) when offered, although those four items do not count against the 50-word limit.

5. Please list any prerequisites: _____

6. When will this course first be offered? (*cannot be current or past term*) _____

7. Please indicate how often course is offered. *Check only the single item that best describes this course. Because these are the only intervals used in the University Catalog, please do not edit or alter the list to fit a particular course. For example, if your course is offered every third year—an interval that does not appear in the Catalog—you might choose “Offered as needed” or “Offered occasionally” instead. Courses that cannot be offered at least every four years should not be proposed.*

- | | | |
|---|--|--|
| ☐ Offered each semester | ☐ Offered in alternate years | ☐ Offered in alternate years, Summer Term |
| ☐ Offered each fall semester | ☐ Offered in alternate years, fall semester | ☐ Offered annually |
| ☐ Offered each spring semester | ☐ Offered in alternate years, spring semester | ☐ Offered every third semester |
| ☐ Offered each Summer Term | | ☐ Offered by arrangement |
| ☐ Offered occasionally | | ☐ Offered as needed |

8. If your proposal is approved, would you be willing for the Thorpe Center to use it as an exemplary submission in the online Curriculum Council Handbook? ☐ Yes ☐ No

9. a. Is/are any other department/program(s) affected in any way by this request (e.g., course is cross-listed, team-taught, required or elective in another major or minor, etc.)?

☐ No ☐ Yes – In what way? _____

Signature of the Chair(s)/Dean(s)/Director(s) of the Affected Department(s)/School(s)/Program(s)

9. b. If this proposal is for a Gateway course, does it overlap with any existing courses at IWU?

☐ No ☐ Yes – In what way? _____

Signature of Existing Course Instructor

10. The Curriculum Council assumes that the faculty members of your department/program have seen and approved of this request. Please sign below if this assumption is correct:

Linda Kunce

Signature of Faculty Member Primarily Responsible for This Proposal

[Signature]

Signature of the Chair(s)/Dean(s)/Director(s) of the Affected Department(s)/School(s)/Program(s)

Neuroscience (PSYC 227 Required for Behavioral Neuroscience Concentration)

Tyler Schwend <tschwend@iwu.edu>

Fri, Sep 12, 2025, 10:01 AM



to Linda, Joe ▾

Hi Linda,

This sounds great to me! The CC proposal looks great. I am in full support.

Tyler

Sociology-Criminology

Todd Fuist <tfuist@iwu.edu>

Wed, Sep 17, 2025, 12:00 PM

to Linda ▾

Hi there,

Just had a department meeting and we're very in support of this. This definitely has our blessing.

Thanks,

Todd

Public Health

Amber Kujath <akujath@iwu.edu>

Tue, Sep 16, 2025, 11:22 AM



to Lindsey, Linda ▾

Thanks for keeping us in the loop, Linda! Lindsey can provide the final say on this and I also happen to agree



Lindsey Kellar <lkellar@iwu.edu>

Mon, Sep 15, 2025, 10:01 PM



to Linda, Amber ▾

Hi Linda,

Thanks for sharing this proposal to request *Formal Reasoning designation for PSYC 227* (stats). I support this proposal as this is a course that serves as an elective option in the Public Health major.

Data Science

Brad Sheese <bsheese@iwu.edu>

Mon, Sep 22, 2025, 4:51 PM



to Todd, me ▾

Linda,

I have had a chance to review the proposal.

The faculty's adoption of this proposal would have no substantive impact on the requirements of various Data Science programs (major/minor/data analytics cert), so I do not think the proposal's consideration should be contingent upon any approval by Data Science.

That said, if CC doesn't see it this way, please do consider the proposal approved by Data Science for consideration by CC.

Best,

Brad

Environmental Studies

Aaron Wilson <wshoults@iwu.edu>

Wed, Sep 17, 2025, 9:03 AM

to Linda ▾

I am aware of and very much support this proposal!

Aaron Wilson

Director and Associate Professor, Environmental Studies

**Written Rationale
CC Request (FR for PSYC 227)**

Type of Request: Existing Course for which Shared Curriculum Credit is Now Requested

Submitting Faculty Members: Linda Kunce, on behalf of the Department of Psychology

Course number: PSYC 227

Course title: Statistics

Existing Course Description (for reference if needed):

227 Statistics. An introduction to statistical procedures in psychology, with the goal of integrating statistical theory with statistical applications. Topics may include basic measurement, probability, measures of central tendency and variability, correlation, regression, hypothesis testing, the t-test, analysis of variance, and non-parametric techniques. Students may not receive credit toward graduation for both this course and ECON 227. Offered each semester.

Proposed Course Description:

227 Statistics (FR): An introduction to statistics in psychology that presents statistics as a formal method of reasoning used to support scientific and practical decision-making. Students develop critical thinking and applied skills as they study descriptive statistics, probability, hypothesis testing, correlation, regression, t-tests, analysis of variance, and other topics. Students may not receive credit toward graduation for both this course and ECON 227. Offered each semester. Prerequisites: None.

Written Rationale for Formal Reasoning (FR) Designation

Rationale Related to the FR Category Description

This statistics course fits well with the Formal Reasoning (FR) category. For example, the IWU category description states that FR courses focus on *“rigorous and rule-governed”* approaches to knowledge with the goal of *“enabling students to use formal methods of reasoning in problem solving, and developing student’s capacities for critical thinking.”* In line with this description, PSYC 227 seeks to cultivate students’ understanding of the ways in which statistics, as a quantitatively-based formal method of reasoning, is used to support scientific understanding and decisions. In addition, PSYC 227 students are challenged repeatedly to think critically as they select, calculate, test, interpret, and report numerous statistics in order to address meaningful problems.

Rationale with respect to the FR Category Goals & Criteria

Formal Reasoning Goal I: Familiarize students with one or more formal systems.

Formal Reasoning Criteria I: Courses focus on examining and carefully defining the

Statistics, as a formal system, provides a rule-based framework for reasoning about data and uncertainty. More specifically, statistics (a) has a body of principles grounded in statistical/mathematical theory and (b) is applied in rule-bound ways by quantitative researchers investigating real-world problems. In PSYC 227, students learn about both statistical principles and their (rule-based) applications. For example, students learn the principles and methods related to summarizing observations, predicting the likelihood of certain outcomes, and drawing inferences about populations based on data obtained from samples.

Throughout the course, emphasis is placed on the definitions and rules that guide statistical work. For example, students calculate statistics using *definitional formulas* (i.e., equations that show the meaning of a statistical procedure) rather than *computational formulas* (i.e., equations that make calculation easier). For example, early in the semester, students learn to calculate the standard deviation—a number that estimates the distance scores tend to fall from the mean of a dataset. The students learn a definitional formula (at left below) rather than a parallel computational formula (at right) that would actually make calculation quicker.

$$SD = \sqrt{\frac{\sum(X-M)^2}{N}} \text{ vs } SD = \sqrt{\frac{X^2 - [(X^2)/N]}{N}}$$

In this instance, the definitional formula helps students “see” that the focus is on “X-M” or how far the scores (X) fall from the mean (M). Throughout the semester, students revisit the basic formula, learning how it is manipulated to calculate the standard deviation in different contexts (e.g., estimated populations standard deviations, standard error). Students’ knowledge deepens as they learn how symbols used in adapted versions of the formula (e.g., SD vs S vs S_M) have precisely defined, agreed-upon meanings in the formal system.

Students also become deeply familiar with the rule-bound procedures of hypothesis testing—a procedure that requires students to integrate their knowledge of probability distributions, statistical assumptions, and the underlying logic that constrains how decisions about statistical significance are made. For example, students are challenged to understand why we must test the Null Hypotheses (prediction of no effect) in order to support the Research Hypothesis (predicted effect); how we construct comparison distributions (i.e., numerical outcomes expected if the Null Hypothesis is true); and how we estimate risk of incorrect decisions (e.g., rejecting a “true” Null Hypothesis [Type I error] or failing to reject a “false” Null Hypothesis [Type II error]). Students learn the formal language and rules that govern this process, as well as how and why procedures both change *and* stay the same across different statistical analyses.

Formal Reasoning Goal 2: Promote the understanding of formal systems and their use in identifying, analyzing, and solving problems.

Formal Reasoning Criteria 2: Courses instruct students in the use of formal systems to

This course challenges students to identify, analyze, and solve statistical problems in ways that demand quantitative reasoning and critical thinking (not just mechanical skills). Here are four examples:

- *Translating Phenomena into Data.* Students consider the challenges of converting real-world phenomena, like math anxiety, into numerical data. They also examine how numerical properties of measurement tools affect the choice of statistical analysis.
- *Matching Statistical Analyses to the Problem Context.* Students grapple with how to choose appropriate analyses based on the nature of the questions being asked (e.g., are we asking about an association or group differences?) and how data are collected (e.g., are numerical observations from distinct or related groups?).
- *Interpretation of Results.* Students interpret the results of statistical analyses not as disembodied numbers, but with respect to what they reveal about the real-world phenomena under study.
- *Reporting Findings.* Students learn to report results following scientific writing conventions. This is a complex process in which students must evaluate what types of claims can be made in light of the specific statistical analyses that were conducted.

Formal Reasoning Goal 3: Provide a real-world context for the use of formal reasoning.

Formal Reasoning Criteria 3: Courses include exercises in which students use formal

This course provides a real-world context for formal reasoning in multiple ways. For example,

- *Real-World Examples.* Instruction uses examples from psychology to illustrate how statistical analyses support scientific reasoning and real-world decision making. For example, excerpts from published studies (e.g., tables, graphs) and stories from IWU alumni (e.g., how they use statistics as professionals) help make real-world applications more tangible for current students
- *Course Theme.* Statistics is currently taught with a sustainability theme, taking a problem-centered approach that highlights how psychological theory and statistical analysis help address questions about personal, social, and environmental sustainability.
- *Problem-Focused Assignments.* Students complete homework assignments that involve analyzing data and reflecting on results from multiple perspectives (e.g., statistical, methodological, psychological, or a “real-world” or personal lens). In addition, students complete other assignments (e.g., applied project or practical exams depending on the semester), in which they analyze real or hypothetical data related to complex, real-world problems. In these contexts, students must apply their skills and reasoning, selecting appropriate statistical analyses, running the analyses using computer software,

interpreting the numbers, and reporting results in light of the problem under study.

Formal Reasoning Goal 4: Convey an appreciation of formal systems.

Formal Reasoning Criteria 4: Courses include an appreciation of the beauty, symmetry

Students approach statistics in widely different ways—ranging from enthusiasm, to disinterest, to premonitions of doom. Thus, not all students will develop the same appreciation for this formal system. That said, instruction highlights the beauty of statistics in many ways and invites students to appreciate that beauty in their own ways. For some students, the beauty is in mastering the basics and being able to get a grasp on interpreting quantitative information. For other students, the beauty is in the insights they develop as they re-encounter core aspects of the formal system in increasingly complex ways. For example, some students experience thrilling shifts in perspective when they suddenly understand a key concept, some find beauty in how formulas relate to one another, and others feel excitement when they (finally) grasp the less-than-intuitive logic of hypothesis testing. As important, for many students, the chance to *apply* their developing statistical knowledge (e.g., in homework, projects, tests, other classes) elicits deep appreciation as they realize how statistical analyses allow researchers to support hypotheses (or not) about important real-world phenomena.

**Support Document for “Request for CC Action Form”
(FR for PSYC 227)
Information for questions 3d, 4, & 9a**

3d. In what way will you assess how this course has met the goals of the Gen Ed category.

Assessment will include direct & indirect measures.

- **Direct Measures**
 - **Exam Items:** Course exams will include questions about (a) the formal system of statistics (e.g., assessing student understanding of hypothesis testing logic), *and* (b) *application problems that require critical thinking* (e.g., interpreting results of statistical tests).
 - **Assignments:** *Homework assignments (and/or projects)* will require students to engage in active problem solving as they choose, calculate, explain, apply, and interpret statistical tests.
- **Indirect measures**
 - *Students will be asked to complete **end-of-semester surveys*** (e.g., IWU category assessment tools) asking how well the course helped students meet the category learning goals.

4. Proposed Course description (for easy copying):

227 Statistics (FR): An introduction to statistics in psychology that presents statistics as a formal method of reasoning used to support scientific and practical decision-making. Students develop critical thinking and applied skills as they study descriptive statistics, probability, hypothesis testing, correlation, regression, t-tests, analysis of variance, and other topics. Students may not receive credit toward graduation for both this course and ECON 227. Offered each semester. Prerequisites: None.

9a. Impact on other departments.

PSYC 227 is included in course offerings for 5 departments:

- It is a requirement for Neuroscience
- It is an elective for Sociology-Criminology, Public Health, Data Science, & Environmental Studies).

*In lieu of signatures on the form, statements were collected via email from chairs/program heads of these departments—**Copies provided on next page.***