

CALIFORNIA STATE UNIVERSITY CHANNEL ISLANDS

COURSE MODIFICATION PROPOSAL

**Courses must be submitted by October 15, 2012, and finalized by the end of the fall semester to make the next catalog (2013-14) production**

DATE (CHANGE DATE EACH TIME REVISED): NOVEMBER, 23, 2011; REV 2.2.12

PROGRAM AREA(S) : MATHEMATICS

**Directions:** All of sections of this form must be completed for course modifications. Use **YELLOWED** areas to enter data. All documents are stand alone sources of course information.

**1. Indicate Changes and Justification for Each.** [Mark all change areas that apply and follow with justification. Be as brief as possible but, use as much space as necessary.]

- |                                                                 |                                                                            |
|-----------------------------------------------------------------|----------------------------------------------------------------------------|
| <input checked="" type="checkbox"/> X Course title              | <input type="checkbox"/> Course Content                                    |
| <input type="checkbox"/> Prefix/suffix                          | <input checked="" type="checkbox"/> X Course Learning Outcomes - rephrased |
| <input type="checkbox"/> Course number                          | <input type="checkbox"/> References                                        |
| <input type="checkbox"/> Units                                  | <input type="checkbox"/> GE                                                |
| <input type="checkbox"/> Staffing formula and enrollment limits | <input type="checkbox"/> Other                                             |
| <input type="checkbox"/> Prerequisites/Corequisites             | <input type="checkbox"/> Reactivate Course                                 |
| <input checked="" type="checkbox"/> X Catalog description       |                                                                            |
| <input type="checkbox"/> Mode of Instruction                    |                                                                            |

**Justification:** The course is an upper division statistics course. The title will indicate the fact that the course is not an elementary introduction to statistics and that it is addressing specific business and economic applications using statistical software. This change was requested by Business School.

**2. Course Information.**

[Follow accepted catalog format.] (Add additional prefixes i f cross-listed)

**OLD**

Prefix MATH Course# 329  
Title Statistics for Business and Economics Units (3)  
3 hours lecture per week  
hours blank per week

Prerequisites:

Consent of Instructor Required for Enrollment

Corequisites:

**Catalog Description** (Do not use any symbols):

Introduction to modern statistical methods used in business analysis and economics, especially in experimental data evaluation and decision making contexts. Topics include: sampling, probability, various distributions, correlation and regression, statistical inferences, hypothesis testing, problem solving and the consequences to underlying economical systems. Includes a project in the community.

General Education Categories: B3

Grading Scheme (Select one below):

x A – F

Credit/No Credit

Optional (Student's Choice)

Repeatable for up to units

Total Completions

Multiple Enrollment in Same Semester No

Course Level:

x Undergraduate

Post-Baccalaureate

**NEW**

Prefix MATH Course# 329  
Title Applied Statistics for Business and Economics Units (3)  
3 hours lecture per week  
hours blank per week

Prerequisites:

Consent of Instructor Required for Enrollment

Corequisites:

**Catalog Description** (Do not use any symbols):

Applications of modern statistical methods used in business analysis and economics, especially in experimental data evaluation and decision making contexts. Topics include: sampling, probability, various distributions, correlation and regression, statistical inferences, hypothesis testing, problem solving and the consequences to underlying economical systems. Includes a project in the community.

General Education Categories: B3

Grading Scheme (Select one below):

x A – F

Credit/No Credit

Optional (Student's Choice)

Repeatable for up to units

Total Completions

Multiple Enrollment in Same Semester NO

Course Level:

x Undergraduate

Post-Baccalaureate

**3. Mode of Instruction (Hours per Unit are defaulted)**Hegis Code(s) \_\_\_\_\_  
(Provided by the Dean)**Existing****Proposed**

|               | Units    | Hours Per Unit | Benchmark Enrollment | Graded |               | Units    | Hours Per Unit | Benchmark Enrollment | Graded | CS No. (filled out by Dean) |
|---------------|----------|----------------|----------------------|--------|---------------|----------|----------------|----------------------|--------|-----------------------------|
| Lecture       | <u>3</u> | <u>1</u>       | <u>24</u>            | A-F    | Lecture       | <u>3</u> | <u>1</u>       | <u>24</u>            | A-F    | _____                       |
| Seminar       | _____    | <u>1</u>       | _____                |        | Seminar       | _____    | <u>1</u>       | _____                |        | _____                       |
| Lab           | _____    | <u>3</u>       | _____                |        | Lab           | _____    | <u>3</u>       | _____                |        | _____                       |
| Activity      | _____    | <u>2</u>       | _____                |        | Activity      | _____    | <u>2</u>       | _____                |        | _____                       |
| Field Studies | _____    |                | _____                |        | Field Studies | _____    |                | _____                |        | _____                       |
| Indep Study   | _____    |                | _____                |        | Indep Study   | _____    |                | _____                |        | _____                       |
| Other blank   | _____    |                | _____                |        | Other blank   | _____    |                | _____                |        | _____                       |
| Online        | _____    |                |                      |        | Online        | _____    |                |                      |        | _____                       |

**4. Course Attributes:**

X **General Education Categories:** All courses with GE category notations (including deletions) must be submitted to the GE website: <http://summit.csuci.edu/geapproval>. Upon completion, the GE Committee will forward your documents to the Curriculum Committee for further processing.

**A (English Language, Communication, Critical Thinking)**

A-1 Oral Communication

A-2 English Writing

A-3 Critical Thinking

**B (Mathematics, Sciences & Technology)**

B-1 Physical Sciences

B-2 Life Sciences – Biology

x B-3 Mathematics – Mathematics and Applications

B-4 Computers and Information Technology

**C (Fine Arts, Literature, Languages & Cultures)**

C-1 Art

C-2 Literature Courses

C-3a Language

C-3b Multicultural

**D (Social Perspectives)****E (Human Psychological and Physiological Perspectives)****UDIGE/INTD Interdisciplinary****Meets University Writing Requirement****Meets University Language Requirement****American Institutions, Title V Section 40404:** Government US Constitution US HistoryRefer to website, Exec Order 405, for more information: <http://senate.csuci.edu/comm/curriculum/resources.htm>**Service Learning Course** (Approval from the Center for Community Engagement must be received before you can request this course attribute).**5. Justification and Requirements for the Course.** [Make a brief statement to justify the need for the course]**OLD**

This course is required for Business major students according to accreditation guidelines.

**NEW**

This course is required for Business major students according to accreditation guidelines.

This course is not designed to satisfy the University Writing or Language requirements.

This course is not designed to satisfy the University Writing or Language requirements.

- x Requirement for the Major/Minor
- x Elective for the Major/Minor
- x Free Elective

- x Requirement for the Major/Minor
- x Elective for the Major/Minor
- x Free Elective

**Submit Program Modification if this course changes your program.**

**No changes**

**6. Student Learning Outcomes.** (List in numerical order. You may wish to visit resource information at the following website: <http://senate.csuci.edu/comm/curriculum/resources.htm>)

Upon completion of the course, the student will be able to:

**OLD**

This course provides students

- an understanding of the application of statistics in business and research situations.
- the nature of statistical inference
- the ability to analyze data in statistical and graphical terms.
- knowledge of a computer-based statistics software package.
- a variety of commonly used techniques and the models underlying them.
- The ability to express a generally posed scientific question as a statistical question

Upon completion of the course, the student will be able to:

**NEW**

After the course students will be able to

- apply statistics and statistical software in business and research situations.
- apply statistical inference to decision making
- analyze data in statistical and graphical terms.
- use various computer-based statistics software packages and on-line resources.
- apply a variety of commonly used tests and techniques as well as model various situations
- express a generally posed scientific question as a statistical question

**7. Course Content in Outline Form.** (Be as brief as possible, but use as much space as necessary)

**OLD**

Graphical Descriptive Techniques  
Numerical Descriptive measures  
Data Collection and Sampling  
Probability Distributions (Discrete and Continuous)  
Central Limit Theorem  
Estimation  
Hypothesis Testing  
Comparison of Two Populations  
Anova  
Simple Linear Regression and Correlation

**NEW**

Graphical Descriptive Techniques  
Numerical Descriptive measures  
Data Collection and Sampling  
Probability Distributions (Discrete and Continuous)  
Central Limit Theorem  
Estimation  
Hypothesis Testing  
Comparison of Two Populations  
Anova  
Simple Linear Regression and Correlation

Does this course content overlap with a course offered in your academic program? Yes No x  
If YES, what course(s) and provide a justification of the overlap.

Does this course content overlap a course offered in another academic area? Yes No x  
If YES, what course(s) and provide a justification of the overlap.

**Overlapping courses require Chairs' signatures.**

**8. Cross-listed Courses (Please note each prefix in item No. 1)**

**A. List cross-listed courses (Signature of Academic Chair(s) of the other academic area(s) is required).**

- B. List each cross-listed prefix for the course:  
C. Program responsible for staffing: MATHEMATICS

9. References. [Provide 3-5 references]

OLD *Statistics For Management and Economics*, Gerald Keller, Brian Warrack

NEW *Statistics For Management and Economics*, Gerald Keller, Brian Warrack

10. Tenure Track Faculty qualified to teach this course.  
MATH FACULTY

11. Requested Effective Date or First Semester offered: Fall 2012

12. New Resource Requested: Yes No x

If YES, list the resources needed.

A. Computer Needs (data processing, audio visual, broadcasting, other equipment, etc.)

B. Library Needs (streaming media, video hosting, databases, exhibit space, etc.)

C. Facility/Space/Transportation Needs:

D. Lab Fee Requested: Yes No ( Refer to the Dean's Office for additional processing)

E. Other.

13. Will this course modification alter any degree, credential, certificate, or minor in your program? Yes No

If, YES attach a program update or program modification form for all programs affected.

Priority deadline for New Minors and Programs: October 1, 2011 of preceding year.

Priority deadline for Course Proposals and Modifications: October 15, 2011.

Last day to submit forms to be considered during the current academic year: April 15<sup>th</sup>.

Ivona Grzegorzczuk

Nov 23, 2011

---

Proposer(s) of Course Modification

---

Date

Type in name. Signatures will be collected after Curriculum approval.

GE Committee response to your request have MATH329: STATISTICS FOR BUSINESS AND ECONOMICS added to B3: Mathematics -- Mathematics and Applications

Approved by committee on 11-17-2010

-----  
Request Submitted  
-----

Course: MATH329 STATISTICS FOR BUSINESS AND ECONOMICS

Area: B3 Mathematics -- Mathematics and Applications

Date Submitted: 11/16/2010 12:00:00 AM

Date Approved: 12/8/2011 3:05:30 PM

1. Promote the understanding and appreciation of the methodologies of math or science as investigative tools and the limitations of mathematical or scientific endeavors

The focus of this course is the development and use of statistical methods for testing hypotheses, problem solving, and the consequences to the underlying economical systems. Students learn different types of hypothesis testing and learn the uses and limitations of different statistical tests and related technologies.

2. Present mathematical or scientific knowledge in a historical perspective and the influences of math and science on the development of world civilizations, both past and present

Students in this course will "apply quantitative problem-solving skills to social science and health related problems and issues." These health and social science issues are chosen to show the impact of statistical tool on the development of these scientific areas.

3. Apply inductive and deductive reasoning processes and explore fallacies and misconceptions in the mathematical or scientific areas

Students will learn to re-express questions about business in terms of a statistical question which they will apply statistical tests to answer. Students will be able to express the level of accuracy to their answer and analyze errors produced by software systems.

4. Promote an understanding of mathematical ideas and problem solving skills

Promote an understanding of mathematical ideas and problem solving skills, Students and learn the theory behind and application of statistics and the related software applications as well as hypothesis testing methods and decision making.

Students apply these methods in the business realm.

# Approval Sheet

## Course: MATH 329

If your course has a General Education Component or involves Center affiliation, the Center will also sign off during the approval process.

Multiple Chair fields are available for cross-listed courses.

The CI program review process includes a report from the respective department/program on its progress toward accessibility requirement compliance. By signing below, I acknowledge the importance of incorporating accessibility in course design.

|                                     |  |              |
|-------------------------------------|--|--------------|
| Program Chair<br>Ivona Grzegorzczuk |  | Nov 23, 2011 |
|-------------------------------------|--|--------------|

Signature

Date

|               |  |  |
|---------------|--|--|
| Program Chair |  |  |
|---------------|--|--|

Signature

Date

|               |  |  |
|---------------|--|--|
| Program Chair |  |  |
|---------------|--|--|

Signature

Date

|                         |  |  |
|-------------------------|--|--|
| General Education Chair |  |  |
|-------------------------|--|--|

Signature

Date

|                                  |  |  |
|----------------------------------|--|--|
| Center for Intl Affairs Director |  |  |
|----------------------------------|--|--|

Signature

Date

|                                            |  |  |
|--------------------------------------------|--|--|
| Center for Integrative Studies<br>Director |  |  |
|--------------------------------------------|--|--|

Signature

Date

|                                                 |  |  |
|-------------------------------------------------|--|--|
| Center for Multicultural<br>Engagement Director |  |  |
|-------------------------------------------------|--|--|

Signature

Date

|                                                              |  |  |
|--------------------------------------------------------------|--|--|
| Center for Civic Engagement<br>and Service Learning Director |  |  |
|--------------------------------------------------------------|--|--|

Signature

Date

|                  |  |  |
|------------------|--|--|
| Curriculum Chair |  |  |
|------------------|--|--|

Signature

Date

|     |  |  |
|-----|--|--|
| AVP |  |  |
|-----|--|--|

Signature

Date