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OCT - 2 2009

Request for Curriculum Council Action

TO: Zahia Drici, Associate Dean of Curriculum **DATE SUBMITTED:** 10/02/09

(Please submit 14 double-sided copies of your proposal)

FROM: (Name) Diego Mendez-Carbajo (Department) Economics

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

	Title	Number	Units
☐ New Course (No Gen Ed)			
☑ New Course (Gen Ed)	Time Series Analysis	ECON 370	1
☐ Gen Ed for Existing Course:			
☐ Deletion			
☐ Change title from			
to			
☐ Change number from			
to			
☐ May Term Course			
☐ New Major/Minor			
☐ Revised Major/Minor			
☐ Other			

2a. Please check the category, if any, for which you are requesting General Education unit credit:

☐ Analysis of Values
☐ The Arts
☐ Contemporary Social Institutions
☐ Cultural and Historical Change
☐ Formal Reasoning
☐ Gateway Colloquium
☐ Intellectual Traditions
☐ Literature
☐ Second Language
☐ Life Science Issues
☐ Life Science Lab
☐ Physical Science Issues
☐ Physical Science Lab
☐ Physical Education
☐ Fitness

2b. Please check the flag(s), if any, you are seeking:

☑ Writing Intensive ☐ Global Diversity ☐ U.S. Diversity

3. Please insert here the proposed catalog course description. Course descriptions should be limited to no more than 50 words, not counting (a) title; (b) prerequisites; (c) General Education category; and (d) when offered.

Methods for quantitative research in economics. Topics include data compilation and management; stochastic processes; stationarity; trends and detrending; testing for unit roots; least squares estimation of time series models; and basic estimation of cointegrated vectors.

Over>

4. Please list any prerequisites: ECON 100 and ECON 227

5. When will this course first be offered? Spring 2010

6. 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.*

- ☐ Offered each semester
- ☐ Offered each Fall Term
- ☑ Offered each spring
- ☐ Offered each May Term
- ☐ Offered each semester and May Term
- ☐ Offered occasionally
- ☐ Offered in alternate years
- ☐ Offered in alternate years, Fall Term
- ☐ Offered in alternate years, Spring
- ☐ Offered in alternate years, May Term
- ☐ Offered annually
- ☐ Offered every third semester
- ☐ Offered as needed
- ☐ Offered on request
- ☐ Offered by arrangement

7. Is/are any other department(s) affected in any way by this request (e.g., course is cross-listed, team-taught, etc.)?
☑ No. ☐ Yes. In what way?

Signature of the Head(s) of the Affected Department(s), School(s) or Program(s)

8. **WRITTEN RATIONALES:** If this proposal presents a new course (whether for General Education credit or not), an existing course for which General Education credit is now being sought, a May Term course, or a new major, minor or concentration, please attach a written rationale, following the guidelines found in the *Curriculum Development Handbook*. Please note that CC cannot evaluate incomplete proposals, so to expedite consideration of your submission, you are encouraged to read and follow the guidelines carefully.

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

Signature of Faculty Member Primarily Responsible for This Proposal

Robert M. Lakey

Signature of the Head of the Department, School or Program

Diego Méndez-Carbajo
Request for Curriculum Council Action
Fall 2009

Writing Intensive Flag for "Time Series Analysis"

1. Overall Course Fit

The course will be focused on the understanding and application of basic statistical analysis techniques to time series data. Economics as a discipline has a theoretical component (i.e. model-building to explain economic phenomena) and an empirical component (i.e. model-testing through the statistical analysis of collected data). Econometrics is the field of economics devoted to the empirical testing of theories. Different theories require different testing techniques. For example, when a theory tries to explain which particular qualities make cultural organizations more or less successful in private fundraising efforts a proper empirical test will examine a variety of organizations at one fixed point in time. This is called cross-sectional analysis. If the theory attempts to explain the evolution of successful private fundraising efforts we will examine one or several organizations over a period of months or years. This is called time series analysis.

The Economics Department currently offers a course on Introductory Statistics (ECON 227) and a course on Econometrics (ECON 328). This last course focuses on the classical regression model, not addressing specific issues of time series. Therefore, the Time Series Analysis course (ECON 370) will fill a current curriculum gap. Besides addressing the potential needs of Economics majors there is a significant constituency of Business Administration majors wishing to become actuaries who would be highly interested in this course.

2. Course Staffing

Diego Mendez-Carbajo will teach the course. This course will become the second upper-division elective course regularly offered by him. There will be no direct impact on the current departmental course offerings and no immediate implications for staffing.

3. Course Deletion / Addition

There is no need to delete any existing course in order to be able to offer "Time Series Analysis".

4. Rationale for Course Level

All courses in the Economics Department except Introduction, Statistics, and May Term are numbered at the 300 level.

5. Proposed Course Unit

The proposed course unit is one (1).

6. Pedagogical Resources

The course will make use of the existing library, computer and media resources related to the course content. Namely: scanning and optical character recognition software available at Ames Library for data gathering and formatting; statistical analysis software available at the Economics Department computer laboratory; computers and video equipment installed in the assigned classroom for regular instruction. Data will be sourced primarily from McLean county and the City of Bloomington

7. Fulfillment of Flag Goals and Criteria

7.a Opportunities for Significant Practice in Writing

Illustrating how the tools of time series analysis are applied will involve several steps. Students will have to identify a concise research question suitable to be studied econometrically, gather data, design a research program, compute statistical tests, report their findings, and analyze the statistical and economic significance of such findings. These efforts will be reported in three writing assignments outlined as follows: (A) a two-page research proposal, (B) a four-page research paper, and (C) a one-page summary suitable for an oral/poster presentation. All tables and graphs will be reported in appendixes. The research proposal (A) will be drafted within the first month of classes, right after examining the different available data sources. As the theoretical content of the course is developed the students will begin work on the research paper (B). An early draft will be due by the end of February and a more complete version by the end of March. This version of the research paper will contain all the elements of the data analysis effort to be reported in (C) the one-page summary. A draft will be due at the time of oral presentations, by the second week of April.

7.b Focus on Writing as a Process and Opportunities for Revision

This course will give students significant practice in writing by requiring a draft version of each assignment and by undergoing at least one round of revisions. The research paper will require two revisions. As previously mentioned, the assignments will be structured so that they are sequentially completed during the semester.

7.c Writing According to Purpose and Audience

In order to enable students to understand matters of purpose and audience in their writing each assignment will be explicitly addressed to a different type of reader. Namely: the research proposal will be aimed at securing "permission" from a data administrator to conduct a research program by accessing a specific data set; the research paper will be addressed to their "research peers" and document their findings; the summary will be crafted to communicate such findings to an audience with no specific training on economics or statistics.

7.d A Tool for Invention and Discovery

The course will give students opportunities to use writing as a tool for discovery of patterns and trends in their immediate social environment. By gaining a better understanding of the underlying structure of phenomena captured in time series of data and sharing their findings with different audiences the students will contribute to the process of intellectual invention that is at the heart of college life.

8. Assessment Plan

In order to assess how well the goals appropriate to the proposal have been met the instructor will take the following steps: (A) examine the timing of deadlines for the different assignments –attempting to ensure a reasonable balance between quality of content and timeliness of delivery; (B) assess how well each assignment illustrates the contents of the course while effectively conveying the relevant information in writing; and (C) design a course-specific student evaluation form to gather feedback on how well the different instructional pieces of the course mesh together (i.e. theoretical lectures, applied instruction, independent data gathering and analysis, draft writing and oral presentations, usefulness of the revision process…). All these pieces of information will help refine the scope of topics discussed in the course and guide future instruction.

Conclusion

The applied nature of the material discussed in this course is ideally suited for individual writing assignments. Students will complete multiple written assignments in order to show how the different pieces of the lectures and class discussions integrate into a coherent research program that addresses a relevant question. The three written assignments in this course shall give students significant practice in writing, shifting audiences and changing purposes from assignment to assignment while allowing revisions. The instructor, Diego Mendez-Carbajo, will build on his past experience teaching three consecutive Gateway Colloquia to accomplish these goals. Individual student conferences, presentations in front of their peers, the use of the Writing Center and data-gathering advice from the library liaison shall offer students rich input to best complete their projects.

APPENDIX

Catalog Course Description

Methods for quantitative research in economics. Topics include data compilation and management; stochastic processes; stationarity; trends and detrending; testing for unit roots; least squares estimation of time series models; and basic estimation of cointegrated vectors.