

UMBC UGC New Course Request: ECON 310 Data Analysis for Economics

Date Submitted: 9/13/2018

Proposed Effective Date: Spring 2019

	Name	Email	Phone	Dept
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COURSE INFORMATION:

Course Number(s)	310
Formal Title	Data Analysis for Economics
Transcript Title (≤30c)	Data Analysis for Economics
Recommended Course Preparation	
Prerequisite NOTE: Unless otherwise indicated, a prerequisite is assumed to be passed with a "D" or better.	ECON 101, ECON 102, (MATH 151 or MATH 155), all with C or better.
# of Credits Must adhere to the <u>UMBC Credit Hour Policy</u>	3
Repeatable for additional credit?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Max. Total Credits	3 <small>3This should be equal to the number of credits for courses that cannot be repeated for credit. For courses that may be repeated for credit, enter the maximum total number of credits a student can receive from this course. E.g., enter 6 credits for a 3 credit course that may be taken a second time for credit, but not for a third time. Please note that this does NOT refer to how many times a class may be retaken for a higher grade.</small>
Grading Method(s)	<input checked="" type="checkbox"/> Reg (A-F) <input type="checkbox"/> Audit <input type="checkbox"/> Pass-Fail

PROPOSED CATALOG DESCRIPTION (Approximately 75 words in length. Please use full sentences.):

This courses surveys theoretical and applied statistical tools relevant to empirical economics. Students will gain an understanding of measures of central tendency and dispersion, hypothesis testing, correlation, and regression analysis. The use of computer software for statistical analysis will be illustrated. Additional topics may include identifying data sources, interpreting the results of empirical research, and carrying out a basic empirical research project.

RATIONALE FOR NEW COURSE:

The course will provide another option for students to meet the introductory statistics requirements for the department's majors (BA Economics and BS Financial Economics). Currently this requirement can be met with STAT 350/351/355/451, CMPE 320. There are multiple reasons to add this course:

- (1) The new course is consistent with the Economics Department's ongoing effort to update our curriculum to stay current with our peers and increase the emphasis on the quantitative skills of our students. The economics departments that we use as peers require an "in house" introductory statistics course. The model in which the basic statistics requirement is met with a service course of a statistics department (as we are currently doing) has fallen out of favor with economics departments in general.
- (2) Related to the above point, using full-time Economics Department faculty is preferred for the intermediate-level core requirement courses for our majors.
- (3) Also related, economics and financial economics majors will benefit from a focus on data sources and software used in economic research, as well as a focus on reading and performing empirical economic research. The

existing courses used by our majors are understandably deficient in these areas as they are not focused exclusively on our students. Full-time Economics Department faculty are best positioned to provide instruction in these areas.

If approved, ECON 310 will be the preferred course for our students. However, STAT 350/351/355/451, CMPE 320 will continue to be accepted for our majors, and as prerequisites for our courses. This maintains scheduling flexibility (for students and for the department), and accommodates students who are double majors, who are pursuing a minor, or who switch to one of our majors from another department or program but who already completed one of these introductory statistics courses.

We expect that one section of ECON 310 will be taught each spring and fall semester, with the possibility of a summer or winter section if student demand warrants.

ATTACH COURSE SYLLABUS (mandatory):

See separate document.

ECONOMICS 310 – DATA ANALYSIS FOR ECONOMICS

Fall 2019

[Class day, time, and room TBD]

Instructor: TBD

Office: TBD

E-mail: TBD

Phone: TBD

Office Hours: TBD

Course description

This course surveys theoretical and practical statistical tools relevant to empirical economics. Students will gain an understanding of measures of central tendency and dispersion, hypothesis testing, correlation, and regression analysis. The use of computer software for statistical analysis will be illustrated. Additional topics including identifying and obtaining data, interpreting analytical results, and carrying out basic empirical research.

Prerequisites

Students must have completed ECON 101, ECON 102, and either MATH 151 or MATH 155, all with a “C” or better.

Required Materials

- *Essential Statistics, Regression, and Econometrics*, 2nd ed., Gary Smith, Elsevier, 2015.
- Calculator – Students will need a calculator to be successful on the exams and homework assignments. Graphing or other programmable calculators are acceptable, but students will be required to clear the memory in the presence of the instructor immediately before receiving an exam.

Grading

Course grades will be determined based on two midterm exams (each worth 20% of the course grade), a cumulative final exam (30% of the course grade), and six homework assignments (each worth 5% of the course grade). The grading scale is 90% for an A, 80% for a B, 70% for a C, 60% for a D, and anything less than 60% is an F. All cutoffs must be reached without rounding (i.e., 89.9% is a B).

Exams will require students to perform empirical analyses as well as respond to short essay questions designed to gauge students’ understanding of the concepts underlying the empirical techniques. Homework assignments will place greater emphasis on empirical analysis, but some conceptual questions may be included.

Course Outline:

Week 1: Course overview and expectations

Week 2: Data – Smith, Ch. 1

Week 3: Displaying Data – Smith, Ch. 2

Week 4: Descriptive Statistics – Smith, Ch. 3; homework assignment 1 due

Week 5: Probability – Smith, Ch. 4

Week 6: Review and Exam 1; homework assignment 2 due

Week 7: Sampling – Smith, Ch. 5

Week 8: Estimation – Smith, Ch. 6

Week 9: Hypothesis Testing – Smith, Ch. 7; homework assignment 3 due

Week 10: Simple Regression, Part 1 – Smith, Ch. 8

Week 11: Review and Exam 2; homework assignment 4 due

Week 12: Simple Regression, Part 2 – Smith, Ch. 9

Week 13: Multiple Regression – Smith, Ch. 10

Week 14: Multiple Regression (continued) – Smith, Ch. 10; homework assignment 5 due

Week 15: Modeling – Smith, Ch. 11

Week 16: Review for Final Exam; homework assignment 6 due

Academic Integrity

“By enrolling in this course, each student assumes the responsibilities of an active participant in UMBC's scholarly community in which everyone's academic work and behavior are held to the highest standards of honesty. Cheating, fabrication, plagiarism, and helping others to commit these acts are all forms of academic dishonesty, and they are wrong. Academic misconduct could result in disciplinary action that may include, but is not limited to, suspension or dismissal. To read the full Student Academic Conduct Policy, consult the UMBC Student Handbook or the UMBC Policies section of the UMBC Directory.”

Student Disability Services (SDS)

The Office of Student Disability Services (SDS) is the UMBC department designated to coordinate accommodations that would allow students with disabilities to have equal access and

inclusion in all courses, programs, and activities at the University. If you have a documented disability and need to request academic accommodations, please refer to the SDS website at sds.umbc.edu for registration information and to begin the process, or alternatively you may visit the SDS office in the Math/Psychology Building, Room 212. For questions or concerns, you may contact SDS through email at disAbility@umbc.edu or phone (410) 455-2459.

Continuity of Course Should Campus Close

It is possible that circumstances can lead to the closure of campus but continuation of courses. In that case, students are expected to monitor their e-mail and continue work as instructed, typically via Connect and Blackboard. Continuation activities may involve course readings, submitting assigned material electronically, accessing recorded lectures online, participating in real time electronic discussions during normal class times, or other methods as may be appropriate. It may also become necessary to alter the course grading system, particularly if in-class exams become problematic.