

Econometrics I: Econ 4020/ 5020 (3 credit hours)

Fall 2022

Tuesday/ Thursday 9:30-10:45.

Business Administration 1003

Professor: Amanda Cook

Office: College of Business 356C

Office Hours: Tuesday and Thursday 2:20-3:20 and by appointment – please make one!

E-mail: Accook@bgsu.edu [Note the double 'c'!]

Course Overview:

Econ 4020/ 5020 is a first semester undergrad/ master's level course in econometrics. We will extend ideas learned in stats and learn new techniques to address topics such as endogeneity, OLS, maximum likelihood estimators, binary dependent variables, and interaction variables. This course will also focus on teaching students how to program in Stata and demonstrating good data practices so other practitioners can see the decisions they made and replicate their work.

Prerequisite courses: Stat 2120, Stat 2200, or permission of the instructor.

Course communication: Class announcements, reminders of assignment and reading deadlines, and key ideas for each class will largely be communicated through the Agenda posted on the board at the start of class. I will also post additional announcements on the announcement page in Canvas or via e-mail. You should check the announcement page and your e-mail regularly to access course related announcements.

I will be checking e-mail regularly to access communications from students and will typically respond to communications within 2 business days. Any communication sent after 5:00 pm on Friday may not receive a response from me until the following Tuesday. Please address your emails to me as Dr. Cook, Professor Cook, or Professor I <3 Econometrics.

We will use Canvas extensively. Problem sets will be posted on Canvas in the Assignments section, Chapter Modules will be posted with data sets that we will use in class and for problem sets. Problem sets will be submitted on Canvas.

Textbook/ resources: Michael Bailey's Real Econometrics: The right tools to answer important questions. Oxford University Press. Edition 1 or 2 is fine.

You will need access to Stata 16. This should be available on a computer in BA 1003 as well as BA 2003 and a few other labs on campus. Note: all labs do not have Stata.

An additional resource is Scott Cunningham's Mixtape, which is downloadable here:
http://scunning.com/cunningham_mixtape.pdf

Student learning outcomes- By the end of this course you will:

1. Understand endogeneity: what it is, why it makes estimating the impact of X on Y challenging, and mechanisms to minimize it.
2. Program in Stata with facility. You will learn how to load and clean data, conduct statistical analysis, and produce files that allow you (and others) to replicate your work.
3. Understand the capacity and limitations of OLS. We will build models from a bivariate regression, to multivariate regressions, we will use indicator variables, interactions, and non linearities in dependent variables.
4. Know what a regression coefficient means in context. You will be able to speak and write knowledgeably about the significance of results.
5. You will write models to answer research questions.
6. You will conduct your own econometric research.

Course Schedule:

Date(Week of)	Topic	Formal Assessments
Week 1 Tuesday, August 23, 2022 Thursday, August 25, 2022	Class intro & Chapter 1: The Quest for Causality	For next class, read chapters 1 & 2 for new knowledge <i>Due 8/29 Introductory letter: Details on Canvas in "Assignments"</i>
Week 2 Tuesday, August 30, 2022 Thursday, September 1, 2022	Chapter 2. Stats in the Wild: Good Data Practices	
Week 3 Tuesday, September 6, 2022 Thursday, September 8, 2022	Chapter 3: Bivariate OLS: The Foundation of Economic Analysis	Stata in class problem set
Week 4 Tuesday, September 13, 2022 Thursday, September 15, 2022	Chapter 4: Hypothesis Testing and Interval Estimation: Answering Research Questions	Asynchronous class session on Thursday
Week 5 Tuesday, September 20, 2022	Finish Chapter 4:	

Thursday, September 22, 2022	Chapter 5: Multivariate OLS: Where the Action Is	
Week 6 Tuesday, September 27, 2022 Thursday, September 29, 2022	Chapter 5: Multivariate OLS: Where the Action Is	
Week 7 Tuesday, October 4, 2022 Thursday, October 6, 2022	Finish chapters 1-5/ Review	Content & Computational Exam 1: October 6th
Week 7 Tuesday, October 11, 2022 Thursday, October 13, 2022	Fall Break on Tuesday Chapter 6. Dummy Variables: Smarter Than You Think	
Week 8 Tuesday, October 18, 2022 Thursday, October 20, 2022	Chapter 6. Dummy Variables: Smarter Than You Think	
Week 9 Tuesday, October 25, 2022 Thursday, October 27, 2022	Chapter 6. Dummy Variables: Smarter Than You Think	
Week 10 Tuesday, November 1, 2022 Thursday, November 3, 2022	Chapter 7. Transforming Variables, Comparing Variables	Asynchronous Class Thursday
Week 11 Tuesday, November 8, 2022 Thursday, November 10, 2022	Chapter 7. Transforming Variables, Comparing Variables	

Week 12 Tuesday, November 15, 2022 Thursday, November 17, 2022	Chapter 7. Transforming Variables, Comparing Variables	
Week 13 Tuesday, November 22, 2022 Thursday, November 24, 2022	Paper Peer edit Thanksgiving Break: Wed-Friday	Asynchronous class session on Tuesday. No class Thursday for Turkey day
Week 14 Tuesday, November 29, 2022 Thursday, December 1, 2022	Content Exam and presentations	PAPERS DUE Dec 1st Content Exam Dec 1st
Week 15		Final Computational exam

Course Expectations:

The class will be conducted in a seminar style. Most class sessions will involve group discussion, programming, and problem solving. You will be expected to contribute in these areas. This means that you will share your insights, including what you know and what you have questions about. For some people, talking in a group can be difficult. For almost everyone, sharing what you are unsure of or don't know is risky and uncomfortable. However, the best learning occurs because of the questions that you ask. You will find that asking questions is the key to your education and to your future success as a professional. It is expected that students will be prepared for each class meeting. There will be lectures, but they assume familiarity of concepts based on the text. Therefore, **you must read assigned material ahead of time.**

There is an expectation that you will read the textbook before we cover it in class.

At the start of a new chapter, I will ask students to summarize key ideas, concepts, equations and questions they had/ things they didn't fully understand. To this end, when we start a new chapter, you should submit a one- two (ish) page summary of the key ideas and questions for each chapter or sections of a chapter. Students will have the opportunity describe the key ideas and concepts, and list all our questions. I focus on questions as I present the material. This is an opportunity for you to take ownership of the course, please use it.

Evaluation (4020):

In this course, you will be evaluated on preparation and participation, a research project in which you will identify and answer a research question using data and econometric

techniques, problem sets, exams. Assignment weights represent the relative importance of assignments to meeting the student learning objectives for the course.

Relative importance

Preparation and participation	10%
Research paper	25%
Problem Sets (take home and in class):	15%
Exam 1 (content, computational):	25%
Exam 2 (content, computational):	<u>25%</u>

Total: 100%

There will be no makeup exams. You will be excused from an exam or in class assessment ONLY with a doctor's note or a letter from an appropriate university official (Dean of students, etc.). If you have an emergency, please contact me as soon as possible.

In the event that this course is moved online due to COVID, the exam formats and dates may change. There may be more smaller exams, oral exams, other formats than specified here. If the university does move on line, I will let you know how course evaluation will change within a week of the move on line.

Evaluation (5020):

In this course, you will be evaluated on presenting a solution to a HW problem in class, problem sets, exams, and for presenting a paper (written by someone else that applies a topic used in class.) and a research project where you identify and answer a research question using data and econometric techniques. You will present your findings to the class at the end of the term and write up your results in a paper.

Relative importance

Problem Sets(in class and take home:	15%
(presenting a HW solution to the class)	5%
Exam 1 (content and computational):	25%
Exam 2 (content and computational):	25%
Research paper	23%
<u>Presentation of your research</u>	<u>7%</u>
Total:	100%

There will be no makeup exams. You will be excused from an exam or in class assessment ONLY with a doctor's note or a letter from an appropriate university official (Dean of students, etc.). If you have an emergency, please contact me as soon as possible.

Details of Assignments:

Problem Sets: These assignments provide you with an opportunity to apply concepts we have learned in class. On take home problem sets, you will have an opportunity to practice new techniques and work to write appropriate Stata code to answer questions. These problem sets will largely be graded for completion, but I reserve the right to grade them for correctness. I encourage you to work together, with a sincere caution that you make sure you can write and replicate all the code on your own. (Or your exams will not go well) In class, you may be asked to demonstrate that understanding on a graded in-class problem set.

Research Paper: You will ask and answer a research question guided by data. (As a hint, find your data first!). Your goal is to write a paper where you explain what your research question is, what data you used, what others have done in the area (a lit review) in addition to highlighting your contribution to the literature and a detailed presentation of your results and what they mean in context. These should be about 10 pages, 12-point font, 1.5 space. As this is a major undertaking, there will be a number of intermediate deadlines to help support you and facilitate feedback from me. Please see the assignments tab in Canvas for intermediate deadlines, a complete assignment description and rubric. For 5020 students, you will present your work at the end of the term. Presentations should be no longer than 20 minutes and no fewer than 15.

Problem Set (HW) Presentation (5020 only): Once a term, you will present a solution to a problem set problem to the class. This will be graded for completion, but the expectation is that, as a master's student, you will be well prepared, clear, and concise.

Submitting Assignments

All assignments are to be submitted through the assignment feature in Canvas. Your graded assignments will be returned to this same location.

Academic Honesty: The instructor and students will adhere to the general Code of Academic Conduct as outlined of the BGSU Student Handbook. Specifically, students will not cheat, fabricate, plagiarize or facilitate academic dishonesty. Students who passively engage in cheating (i.e. allowing others to cheat off of them) may receive the same consequences as the person copying. In group work, if your partner or teammates do all the work on an assignment, you should not be listed as a contributor and should receive no credit for that work. If you allow an assignment to be submitted listing you as a contributor, but you did not contribute, this is equivalent to plagiarism.

Basic needs security:

Any student who faces challenges securing their food or housing and believes this may affect their performance in the course is urged to contact the Dean of Students for support. Furthermore, please notify the professor if you are comfortable in doing so. This will enable her to provide any resources that she may possess.

Parental Status: If you are a parent (or caretaker) and there is a school cancelation or another reason that your usual childcare doesn't work out, please bring your child to class. I really want you to be here and we will work it out. I have kiddos, they may infrequently make an appearance in class.

Classroom Expectations/Inclusion:

For this class to be effective, you must be an active participant. You are expected to contribute to each class session. This includes asking questions, answering others questions, and adding relevant information. The more spontaneous you can be with your contributions, the better. I will periodically call on people to find out what they are thinking and to bring them into the conversation.

Another part of being an active participant is how you react to others. There are things that we can all learn from each other, so we must treat each other with respect and dignity. This means allowing everyone to share their ideas and carefully considering their input. No one should ever be put down for his/her contributions.

Disability Services:

If you have a documented disability which might require modifications in a particular assignment, please contact me in the first two weeks of the term. The Disability Services for Students Office is to help provide equal access and reasonable accommodations to students with disabilities attending BGSU. Students wishing to discuss their eligibility for such accommodations are encouraged to contact the office at 419/372-8495.

University Libraries

Everything you need to know about accessing the BGSU library resources from a distance can be found on the [Jerome Library Distance Education Resources Guide](http://libguides.bgsu.edu/distance) (<http://libguides.bgsu.edu/distance>) page. The main page for the [BGSU Library](https://www.bgsu.edu/library.html) (<https://www.bgsu.edu/library.html>) includes mobile access. If you need research assistance, visit the [Ask Us](https://www.bgsu.edu/library/ask-us.html) (<https://www.bgsu.edu/library/ask-us.html>) page.

Religious Holidays:

It is the policy of the University to make every reasonable effort to allow students to observe their religious holidays without academic penalty. In such cases, it is the obligation of the student to provide the instructor with reasonable notice of the dates of religious holidays on which he or she will be absent. Absence from classes or examinations for religious reasons does not relieve the student of responsibility for completing required work missed. Following the necessary notification, the student should consult with the instructor to determine what appropriate alternative opportunity will be provided, allowing the student to fully complete his or her academic responsibilities. (As stated in The Academic Charter, B-II.G-4.b at: <http://www.bgsu.edu/downloads/file919.pdf>.)

Important Policies College of Business

Vision:

Our vision is to transform lives through excellent business education, impactful research and meaningful service.

Mission and Values Statements:

The College of Business faculty and staff educate and develop tomorrow's business professionals through a student-centric approach, create impactful research, and serve our local, national, and global communities.

College Learning Outcomes:

Goal 1: Students graduating with a BSBA degree will demonstrate competency in business knowledge and its application

Outcomes: Students will -

- Demonstrate understanding of fundamental knowledge in accounting, economics, finance, business statistics, operations & supply chain management, business law, organizational behavior, marketing, information technology, management science, and global strategy.
- Demonstrate proficiency in using business-related software applications.
- Demonstrate competency in integrating knowledge across business disciplines.

Goal 2: Students graduating with a BSBA degree will demonstrate competency in applying appropriate problem solving, decision making and critical thinking skills

Outcomes: Students will –

- Identify a business problem, develop and critically evaluate alternative solutions, and make appropriate recommendations.
- Assess the outcomes of a course of action and make appropriate adjustments.

Goal 3: Students graduating with a BSBA degree will demonstrate effective communication and interpersonal skills

Outcomes: Students will -

- Effectively write a business document.
- Make effective oral presentations in both individual and team settings.
- Demonstrate the understanding and application of teamwork.

Goal 4: Students graduating with a BSBA degree will recognize the ethical aspects of business.

Outcomes: Students will -

- Recognize the context of the ethical situation (economic, legal or cultural).
- Define the ethical responsibilities of business organizations.
- Describe the ramifications of unethical behavior.

College of Business List of Expectations

What Faculty Expect of Students:

- Attendance - Students are expected to consistently attend class, arrive to class on time, stay for the entire class, and to let instructors know when this will not be the case.
- Preparation - Students are expected to put in the necessary work outside of class (reading, watching video, practice problems) to be prepared for class.
- Participation – Students are expected to contribute regularly and meaningfully, as the course structure allows.
- Academic Honesty - Students are expected to be aware of and uphold the BGSU Academic Code of Conduct.
- Professional Etiquette/Manners - Students are expected to behave in a manner that enhances the learning or skill development of themselves and others.
- Engagement – Students are expected to be actively involved outside of the classroom (community service, extracurricular clubs, internships), in order to discover and nurture their passion.

What Students Can Expect of Faculty:

- Communication – Students can expect faculty to clearly describe specific expected behavior, course policies, due dates of assignments, the criteria on which they will be graded, and any changes to the course.
- Preparation and Organization – Students can expect faculty to be well-prepared for class activities, and maintain sufficient organization for the functionality of the course.
- Feedback – Students can expect faculty to provide feedback, either through reasonably prompt graded assignments, or written and oral comments.
- Expertise - Students can expect faculty to be well-qualified and passionate about the subject they teach, and to provide real-world applications of material when appropriate.
- Accessibility – Students can expect faculty to hold regular office hours, and to reply to email and discussion boards within a few days' time. Faculty will try to learn student names, and will generally be cordial to students outside the classroom.
- Respect – Students can expect the faculty to respect their privacy, and to avoid denigrating the student when circumstances cause the student's performance to be less than optimal.

Important University Policies

Code of Student Conduct

Bowling Green State University aspires to create an academic environment grounded in intellectual discovery and guided by rational discourse and civility. Within our learning community, we endeavor to act on our Core Values:

- We respect one another and foster diversity and a culture of inclusion.
- We collaborate with each other and our community partners in the region, the State of Ohio, the nation and the world.
- We promote intellectual and personal growth through curricular and co-curricular efforts.
- We foster an environment of creativity, innovation, and entrepreneurship.
- We expect excellence in all we do.

This Code of Student Conduct is intended to ensure students, as members of our community, and their organizations conduct themselves in accordance with these values including the expectation that all students participate in an environment that respects differences of sex, sexual orientation, race or color, marital status, ethnicity, religion or creed, ancestry, national origin, disability, age, and veteran's status.

This Code thus creates a set of expectations of student conduct, ensures a fair process for determining responsibility when student behavior may have deviated from those expectations and provides appropriate sanctions when a student or student organization has violated the Code of Student Conduct. Every effort will be made to balance the needs and rights of the individual with the welfare of the community as a whole.

Academic Honesty

Students are expected to maintain the highest level of integrity in their academic work. From time to time, however, issues such as cheating, fabrication, or plagiarism in an academic exercise arise. The original jurisdiction and penalty both vary depending on the offense and when it is discovered. Also, there are specific requirements for record-keeping and for notification of the student and academic dean. The official policy is included in the Faculty Handbook (Academic Charter). The policy is also available in the Student Handbook (Codes of Conduct).

Non-Discrimination Policy

Bowling Green State University is committed to providing equal educational opportunity. The University provides access to educational programs and activities without regard to race, sex, sexual orientation, gender identity, gender expression, color, national origin, ancestry, genetic information, pregnancy, religion, age, disability, or status as a veteran. Any grievance regarding alleged discrimination due to race, sex, sexual orientation, gender identity, gender expression, color, national origin, ancestry, genetic information, pregnancy, religion, age, disability, or status as a veteran shall be reported to the Office of Human Resources, 1851 N. Research Drive, 419-372-8421. If both parties are

students, complaints should be reported to the Office of the Dean of Students, 301 Bowen-Thompson Student Union, 419-372-2843.

Applying for Services through Accessibility Services

38 College Park

419-372-8495

access@bgsu.edu

To apply for accessibility services, students must submit documentation of their disability for review by AS staff. There is no deadline to apply for services, but students should be advised that the review process can take several weeks. We encourage prospective students to submit their documentation as soon as they have been accepted to BGSU.

The request should include the following:

1. Request for Accommodation or equivalent information
2. Disability Verification Form or equivalent information
3. Most recent IEP, 504 plan, and multi-factored evaluation (MFE), if applicable

Once we've received and reviewed the documentation, we will notify you in writing of your eligibility status. Notification will be sent to your BGSU email account.

Cancellation of Classes in the Event of Severe Weather

The university equally values the safety and lives of all students, faculty and staff, while recognizing that we must maintain the effective operation of the university during inclement weather and other disruptions when possible.

An emergency closing of Bowling Green State University (BGSU) will be implemented only under severe and extreme circumstances. Every effort will be made to maintain classes. However, when health or safety conditions and/or a declared state of emergency due to other factors warrants, the university may delay the opening of the university or specific offices and areas, cancel some or all classes and/or activities, or implement an emergency closing of all or part of the university.

The decision to close the Bowling Green/Perrysburg campus is a consultative process that includes the President/President's designee, President's cabinet members/designees, and the Director of Public Safety/designee. The President or designee will have the final authority to make the decision to close or delay the opening of all or part of the university, cancel some or all classes or activities, or any necessary combination of the modification of normal operations.

Notwithstanding any announcement of a campus closure, students, faculty, staff, guests, and visitors must assume responsibility for their own health and safety, as well as for their class or work responsibilities. Students who do not attend class because they are concerned about their safety should notify their instructors. Individuals who live outside of Wood County or Erie County may find that their county of residence is under a Level 3

Snow Emergency when Wood or Erie County or is not, making it illegal for them to drive in their own county. Students in this circumstance should notify their instructors.

A decision to close a particular campus, delay opening or cancel classes or activities may be based on weather information and road conditions gathered from the BGSU Police Department, the Ohio State Highway Patrol, the County Sheriff's Office, other local police agencies surrounding the particular campus, official weather reports and forecasts, and consultation with BGSU Campus Operations staff. In most cases, the Bowling Green/Perrysburg campus will not close for winter conditions unless the Wood County Sheriff's Office declares a Level 3 Snow Emergency. (See winter weather conditions as defined by the Sheriff's Office under the definitions section.) Decisions made due to other emergencies may be based on information from local law enforcement, local fire officials, local health officials, and BGSU Campus Operations staff.

Once the decision is made to modify operations at a particular campus, all appropriate individuals will be notified through AlertBG texts, email, the BGSU home page, social media, and other means of digital communication. Local media outlets will be notified as well. The Office of Marketing and Communications will notify the university Fact Line (419/372-2445) and local radio and television stations. These include: WBGU-FM (88.1), WFAL-AM (680), WFOB-AM (1430), WOHO-AM (750), WCWA-AM (1230), WLQR-AM (1470), WRON (AM-1400, FM-97.7), WFIN-AM (1330), and WGTE-FM (91.3), WBGU-TV (Channel 27), and the four Toledo television stations (Channels 11, 13, 24 and 36).

Efforts will be made to notify media, send texts and emails, and post BGSU web site announcements at least one (1) hour before the decision takes effect when known in advance. Also, students, faculty and staff may call the university's answering service number (419/372-SNOW) to confirm whether the Bowling Green/Perrysburg campus and/or BGSU Firelands campus is closed or open due to severe weather.