



**Econ2222A 574
Econometrics I
Fall 2026**

Instructor: Shahed Khan, PhD
Email: mkhan333@uwo.ca

Course Information

Mode of Instruction: In-Person

Calendar Description:

An introduction to econometric description and inference which covers: descriptive statistics for cross-section and time-series samples; probability, discrete and continuous probability distributions, random variables; estimators and sampling distributions; confidence intervals and tests of hypotheses; simple linear regression for normal and non-normal populations.

Pre-requisite(s): Economics 1021A/B and Economics 1022A/B; 0.5 from Mathematics 1225A/B, Mathematics 1230A/B, Calculus 1000A/B, Statistical Sciences 1024A/B, and 0.5 from Mathematics 1229A/B, Mathematics 1600A/B, Calculus 1301A/B or Calculus 1501A/B.

Anti-requisite(s): All other courses in Introductory Statistics (except Statistical Sciences 1023A/B and Statistical Sciences 1024A/B): Biology 2244A/B, Economics 2122A/B, Geography and Environment 2210A/B, Health Sciences 3801A/B, MOS 2242A/B, Psychology 2811A/B, the former Psychology 2810, the former Psychology 2820E, Psychology 2830A/B, Psychology 2850A/B, Psychology 2851A/B, the former Social Work 2207A/B, Sociology 2205A/B, Statistical Sciences 2035, Statistical Sciences 2141A/B, Statistical Sciences 2143A/B, Statistical Sciences 2244A/B, Statistical Sciences 2858A/B.

Extra Information: 3 lecture hours. Note: This course cannot be taken concurrently with or prior to taking Data Science 1000A/B as they will become antirequisites to one another in these sequences.

Course Weight: 0.50

Breadth: Category A

Subject Code: ECONOMIC

Notice: Unless you have either the requisites for this course (fulfilment of pre-requisites, no anti-requisite conflicts), or special permission from your Dean to enrol in it, you may be removed from this course and it will be deleted from your record. This decision may not be appealed. You will receive no adjustment to your fees in the event that you are dropped from a course for failing to have the necessary prerequisites.

KING'S UNIVERSITY COLLEGE
LONDON CANADA
SCHOOL OF MANAGEMENT, ECONOMICS AND MATHEMATICS

Economics 2222A
Intermediate Econometrics I

INSTRUCTOR INFORMATION:

Section	Instructor	Email
570	K. Denniston (she/her)	kdennist@uwo.ca
571	K. Denniston (she/her)	kdennist@uwo.ca
572	T. Pattenden (he/they)	tpattend@uwo.ca
573	T. Pattenden (he/they)	tpattend@uwo.ca
574	S.K. Khan (he/him)	mkhan333@uwo.ca

Note that Dr. Pattenden is the course coordinator for ECON2222A. If there are major concerns regarding the course, please reach out to Dr. Pattenden. However, any course content questions should be directed to the instructor of your section.

Course Description:

An introduction to econometric description and inference which covers descriptive statistics for cross-section and time-series samples; probability, discrete and continuous probability distributions, random variables; estimators and sampling distributions; confidence intervals and tests of hypothesis; simple linear regression for normal and non-normal populations.

Prerequisites:

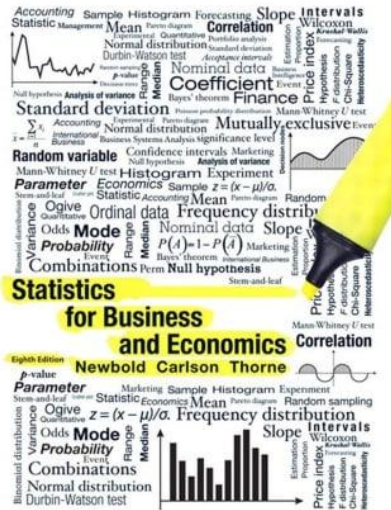
Economics 1021A/B and Economics 1022A/B; 0.5 from Mathematics 1225A/B, Mathematics 1230A/B, Calculus 1000A/B, Statistical Sciences 1024A/B, and 0.5 from Mathematics 1229A/B, Mathematics 1600A/B, Calculus 1301A/B or Calculus 1501A/B.

Antirequisites:

All other courses in Introductory Statistics (except Statistical Sciences 1023A/B and Statistical Sciences 1024A/B): Biology 2244A/B, Economics 2122A/B, Geography 2210A/B, Health Sciences 3801A/B, MOS 2242A/B, Psychology 2811A/B, the former Psychology 2810, the former Psychology 2820E, Psychology 2830A/B, Psychology 2850A/B, Psychology 2851A/B, the former Social Work 2207A/B, Sociology 2205A/B, Statistical Sciences 2035, Statistical Sciences 2141A/B, Statistical Sciences 2143A/B, Statistical Sciences 2244A/B, Statistical Sciences 2858A/B.

Unless you have either the requisites for this course or written special permission from your instructor and/or the associate chair to enroll in ECON2222A, you may be removed from this course and it will be deleted from your record. This decision may not be appealed. You will receive no adjustment to your fees in the event that you are dropped from a course for failing to meet the necessary requisites.

Course Materials:



The textbook we will be basing lecture notes on for ECON2222A is:

Statistics for Business and Economics (8e.) by Newbold, Carlson, and Thorne

The textbook may be purchased through the UWO Bookstore (<https://bookstore.uwo.ca>). The price for the digital copy of the text is \$xx.xx and for the printed version is \$xx.xx

This textbook is **recommended** but not required. Suggested exercises will be given from the text, but lecture notes will be sufficient as your main resource. However, if you have **never** taken a statistics course previously, we highly recommend you purchase and read the text as an additional resource to lecture materials. You are also welcome to purchase a previous addition of the text, as most content is the same – suggested exercises may be different.

The instructional team may also use examples from *Introduction to Econometrics with R* by Hanck, Arnold, Gerber and Schmelzer (<https://www.econometrics-with-r.org/>). This is a freely available text online that has additional examples in R, but is not sufficient to cover all pertinent course material for ECON2222A. You are welcome to bookmark this text and use it alongside the main text.

Important websites and software and their utilization in this course:



OWL Brightspace – This learning management system will be your hub to find all posted resources for this course. This will include lecture notes, additional resources for the week (videos, extra notes, activities) and your grades! Announcements will also be sent out via OWL Brightspace for reminders regarding upcoming assessments and any pertinent information regarding the course. It is your responsibility to check OWL often (daily!!).



R and RStudio – A key tool used in econometrics, data analysis, and analytics in both academia and industry. We will use R and RStudio to demonstrate examples, utilizing R's extensive statistical and data analysis capabilities to show that technology can simplify complex computations for us. R is a free, open-source programming language, and RStudio Desktop is also available free of charge. Please download and install both R and RStudio on your personal computer before the course begins. Classes that involve R will be announced prior to that lecture time. For such classes, it is highly recommended you bring your personal device. By the end of the course, the hope is that you can complete, at the very least, basic econometric and data analysis tasks in R.

Email and Communication Policy:

The best method to contact your instructor for this course is in-person before or after class. If this does not work for you, then you can email your instructor. All emails **MUST** be sent through your official UWO email address (username@uwo.ca) so it does not end up in spam. The subject line of your email must include the course and section number (i.e., **ECON 2222 57X**). We will endeavour to respond to your emails within 3 business days.

Email communication should be reserved only to provide information or ask a question that requires a brief response. Any questions asked via email that have been answered in this outline or on the course website (Brightspace) will **not** be responded to. It is your responsibility to seek the information to the best of your ability before emailing your instructor.

Mathematical questions will not be answered via email. You must speak directly to your instructor to have these answered.

Learning Outcomes:

By the end of the course, students will be able to:

1. Interpret tables, graphs and statistics used for describing data;
2. Apply probability theory to model random variables;
3. Estimate population parameters using point and interval estimators;
4. Evaluate and describe the properties of an estimator; and
5. Test theories about population parameters (determine an appropriate test statistic; implement a formal hypothesis test and interpret the outcomes).

Evaluation:

Your final grade will be calculated through the following scheme:

Math Quiz	5%
In Class Participation	5%
Section Specific Assessment(s)	10%
Group Data Report (due Dec. 9 th at 11:59pm)	15%
Midterm (October 24 th from 12:00pm to 2:00pm)	25%
Final Examination (to be scheduled by the Registrar)	40%

Details regarding each evaluation are given below.

Math Quiz:

The Math Quiz is worth 5% of your final course grade. It is jointly administered and hosted by the School of MEM across four principal Economics courses: Econ 1021, 2220, 2222, and 2260. As second-year students you will complete the 2000-level version of the quiz.

To earn grade points for this quiz, you must achieve a score of at least 50% on either attempt. Once passed, your exact score will be added to your final mark; scores below 50% will receive 0% on the quiz. Students have two chances to succeed:

- Attempt #1 on September 19th
- Attempt #2 on October 3rd

The score earned on this quiz applies uniformly across all corresponding first-year or second-year economics courses you are enrolled in this term.

If you miss both quiz attempts due to uncontrollable or unforeseen circumstances, you may request an approved make-up slot. Upon approval, you can select an available Friday make-up time on September 25 or October 9. No further exemptions or extensions will be granted beyond the make-ups.

Note: The contact information for the math-quiz-related matters, specific room assignments, exact times, and access links for office hours/tutorials/information video will be announced on Brightspace.

- Participation:** Dependent on your section, participation will be tracked differently. Participation may be tracked through the usage of Socrative or iClicker Cloud, or simply through attendance checking. Your section instructor will provide details on how participation is tracked on the first day of classes.
- Section Specific Assessments:** Each section will have a portion of their grade based on section specific assessments. These could be take-home assignments or problem sets, in-class quizzes, online quizzes, or the like. Instructors will provide details on their section specific assessments on the first day of classes. The course coordinator reserves the right to curve section specific assessments to ensure consistency of grading across all five sections of ECON2222A.
- Group Project:** Working in groups of three (3) or four (4), students are expected to find and analyse a real-world data set of their choosing. It is recommended students use a data set from some field relevant to their interests and future academic/career goals (i.e., financial data, sport data, etc.). Students are to submit a report in .DOCX format and a spreadsheet of the data in .XLSX format by December 9th at 11:59PM. Late submissions will be accepted up until December 12th at 11:59PM without penalty. No submissions will be accepted after this date. Specific details about the format of the report, a grading rubric and report details shall be posted to Brightspace before October 1st. The instructor reserves the right to seek additional clarification about the report as part of the grading structure.
- Midterm:** The midterm will be held on Saturday, October 24th from 2:00pm to 4:00pm (locations to be announced). Students will have 120 minutes to complete the midterm test. The midterm will be comprised of some combination of multiple choice, true-false, matching and short answer written response problems. A practice midterm will be posted for students (with solutions) two weeks prior to the midterm date. All sections of ECON2222A will write the same midterm examination (with possible version differences).
- Undocumented absences will not be permitted for the midterm. If a student misses the midterm due to uncontrollable or unforeseen circumstances, then the student must notify the instructor within 72 hours and submit formal documentation to the Academic Dean's office to take the schedule makeup midterm. *For students approved by the Dean's office to write a makeup, there will be a makeup exam on Friday, October 30th (timing to be announced).*
- Final Examination:** The final examination will be scheduled by the Registrar's Office during the December Exam period. The final examination will be three (3) hours in length. The final examination will be comprised of some combination of multiple choice, true-false, matching and short answer written response questions. A practice final examination will be posted for students (with solutions) two weeks prior to the start of the December Exam period.

Students are allowed to use a non-programmable scientific calculator on all assessments in ECON 2222A.

IMPORTANT - Due to the flexibility of the marking scheme, there is no make-up for any reason for missed in-class participation. Accommodation will already be considered within the marking scheme.

To earn a minimum of 50% in ECON2222A, students must write the final examination for the course. Either during the scheduled time by the registrar or during the King's make-up time post the examination period. Failure to write the final examination will result in a maximum grade of 45%.

In-Class Notes:

Instructors will provide students with in-class notes or slides. These will be posted to section specific Brightspace pages. Note that if attendance in class begins to lack, annotated notes may be password protected with the password given only to those that attend class. It is extremely important that you attend class, participate, ask questions, and be present in all aspects of the word. **We do not want to password protect notes, but will do so if needed.**

Take note that studies have shown that attending class is more important than simply reading posted notes from an instructor. Do your best to attend every class, and actively participate.

Student Hours:

Some professors may call this time each week "office hours", but I cannot stand that term as it makes it sound like I do not want you around. In fact, these hours are scheduled for you to come see us. We will be sitting, more than likely alone, somewhere on campus (TBD) awaiting you to grace me with your presence. This is your time to speak with us (your oh so scary instructors) about course content, future directions, life, Netflix or whatever. Student hours will occur in-person somewhere on campus. If you are unable to attend student hours, please email your instructor to schedule an appointment.

To give you a sense of how student hours work, watch this short video: <https://vimeo.com/270014784>¹

Course Policy on Use of Artificial Intelligence (AI):

Within this course, use of artificial intelligence (AI) tools such as Chat GPT is not permitted for any assessments (including quizzes, tests, exams or the group project) submitted for evaluation. Unauthorized use of AI will be subject to academic discipline.

Please note that instructor reserves the right to seek additional clarification about any submitted work (e.g., explain a solution) as part of any test or exam, including any multiple-choice tests.

Equal Opportunity and Evaluation Policy:

The university is committed to academic integrity and has high ethical and moral standards. All students will be treated equally and evaluated using the criteria presented in this course outline and their respective weights. The evaluation criteria are based strictly on actual achievement, not on effort. Claims of an excellent academic history, of attendance in the course components, or of personal issues (family, relationship, financial, etc.) cannot be used to justify a higher grade in the course because they are not criteria for evaluation. The requirement for a higher grade to, for example, maintain a scholarship, enter a program, or obtain a higher GPA for various reasons, is not a justifiable reason for increasing your grade. If we increased or "bumped" your grade (i.e. gave you a grade that you did not legitimately earn), it would be unfair to the other students and also a great disservice to the scholarships and programs who are evaluating all students on the basis of their grades. This means, for example, if you receive 58% in the course we will not "bump" your grade to a 60%; you will simply need to take the course again if you need 60%.

¹ It does bother me that Dr. Ishak calls them "office hours" ... but I digress ...

EDID Statement:

We are committed to having a respectful classroom where all feel welcomed. Our class time is a safe space to be yourself, and to question the course content. Discussion is always encouraged, and you should never feel silenced by your instructor or a peer. We all come from different backgrounds, and that is what makes science (and the world!) an amazing place. If you ever feel disrespected, put down, or not included for whatever reason, please reach out to me. We will always be a safe person for you to talk to.

Decolonization Statement:

Western sits on the traditional territories of the Anishinaabek, Haudenosaunee, Lūnaapéewak and Chonnocton Peoples. The legacy of colonization and colonialism is felt globally and is imprinted in our educational system. Western is taking some initial steps toward recognizing it. Textbooks can be biased toward a particular cultural narrative. Science (especially Statistics and Mathematics) textbooks are no exception. I will strive to include unique content as much as I can, and I seek your feedback.

The instructional team reserves the right to adjust anything within this outline with sufficient notice to those enrolled in ECON2222A.

Tentative Class Schedule:

This is subject to change and should not be held as absolute. All textbook sections come from Statistics for Business and Economics by Newbold et. al.

Week of ...	First Weekly Class	Second Weekly Class
Sept 7 th	Please note that sections 571 and 574 will only have class on Friday in the first week.	Introduction to ECON2222A and Downloading R and RStudio and Introduction to Econometrics
Sept 14 th	Chapter 1 (descriptive statistics, types of data)	Chapter 1 (graphs and histograms)
Sept 21 st	Chapter 2 (centre and variation, measure of position, covariance and correlation)	Chapter 2 (centre and variation, measure of position, covariance and correlation)
Sept 28 th	Chapter 11 (overview of the linear regression model)	Chapter 3 (probability theory and joint probability distribution)
Oct 5 th	Chapter 3 (joint probability distribution and Bayes' rule)	Chapter 4 (discrete probability including binomial and Poisson distributions, linear combination of variables)
Oct 12 th	FALL READING WEEK	FALL READING WEEK
Oct 19 th	Chapter 4 (discrete probability including binomial and Poisson distributions, linear combination of variables)	Review Class for Midterm
Oct 26 th	Chapter 5 (continuous probability, linear combination of normals)	Chapter 5 (continuous probability, linear combination of normals)
Nov 2 nd	Chapter 5 (continuous probability, linear combination of normals)	Chapter 6 (sampling distributions, probability for sample mean, proportion and variance)
Nov 9 th	Chapter 6 (sampling distributions, probability for sample mean, proportion and variance)	Chapter 6 (sampling distributions, probability for sample mean, proportion and variance)
Nov 16 th	Chapter 7 (confidence intervals for population mean, proportion and variance)	Chapter 7 and 8 (confidence intervals for population mean, proportion and variance)

Nov 23rd	Chapters 7 and 8 (confidence intervals for population mean, proportion and variance)	Chapter 9 (hypothesis testing)
Nov 30th	Chapter 9 (hypothesis testing)	Chapter 9 (hypothesis testing)
Dec 7th	Chapter 9 (hypothesis testing)	-- no class --
Dec 11th – Dec 22nd	-- no class --	-- no class --

KING'S UNIVERSITY COLLEGE

GENERAL COURSE POLICIES

2026-2027

1. Academic Accommodations, Consideration for Absences

Academic Accommodation (Accessibility)

Accessibility Services works to ensure that academic programs are accessible to all students, and supports students who may have a condition related to, but not limited to, vision, hearing, mobility, different ways of learning, mental health, chronic illnesses, chronic pain, autism spectrum disorder, ADD/ADHD, and temporary conditions (beyond short-term academic consideration). Accessibility Services provides recommendations for accommodation based on medical documentation or psychological and cognitive assessment. The accommodation policy can be found [here](#) Academic Accommodation for Students with Disabilities. Information on Accessibility Services at King's can be found [here](#).

Academic Consideration for Student Absence

If a student is unable to meet a course requirement due to substantial but temporary extenuating circumstances (medical or compassionate), they should follow the procedures below.

In some cases, where instructors have built flexibility into their assessments, this flexibility will already address consideration needs.

Requests for academic consideration should be directed to the Academic Advising Office of your faculty/college of registration. Requests must be made as soon as possible and no later than 48 hours after the missed assessment.

As a rule, documentation is required for academic consideration. For academic consideration requests on medical grounds, the Student Medical Certificate is available at <https://registrar.uwo.ca/academics/pdfs/student-medical-certificate.pdf>

Students are permitted one academic consideration request without supporting documentation per term per course.

Instructors may designate one assessment per half-course weight as requiring formal supporting documentation. Please refer to the course outline for each course.

For further information, please see:

https://uwo.ca/univsec/pdf/academic_policies/appeals/academic_consideration_Sep24.pdf

Absences from Final Examinations

If you miss the Final Exam, contact the Academic Advising Office of your faculty/college of registration as soon as you are able to do so. They will assess your eligibility to write the Special Examination (the name given by the University to a makeup Final Exam).

You may also be eligible to write the Special Exam if you are in a “Multiple Exam Situation” (e.g., more than 2 exams in 23-hour period, or more than 3 exams in a 47-hour period).

If a student fails to write a scheduled Special Examination, the date of the next Special Examination (if granted) normally will be the scheduled date for the final exam the next time this course is offered. The maximum course load for that term will be reduced by the credit of the course(s) for which the final examination has been deferred. See the Academic Calendar for details (under Special Examinations).

Religious Accommodation

Students should consult the University's list of recognized religious holidays, and should give notice in writing to the instructor and Academic Advising Office if a course requirement will be affected by a religious holiday/observance. Notice must be given as early as possible, and no later than two weeks prior to an examination, and one week prior to a midterm test date. It is the responsibility of such students to inform themselves concerning the work done in classes from which they are absent and to take appropriate action.

2. Support Services

Accessibility, Counselling and Student Development at King's University College:

<https://kings.uwo.ca/community/library/services/accessibility/>

Students experiencing emotional or mental health distress can access services at King's University College: <https://kings.uwo.ca/campus-life/student-supports/>

Good2talk is a good online and phone 24/7 resource for students and is available in English, Mandarin, and French: <https://good2talk.ca>, 1-866-925-5454

MentalHealth@Western provides a complete list of options about how to obtain help:

<https://www.uwo.ca/health/mental-health/index.html>

Academic Support Services at King's University College:

<https://www.kings.uwo.ca/current-students/academic-resources/>

GBSV Support:

King's (Western) is committed to reducing incidents of gender-based sexual violence (GBSV) and providing compassionate support to anyone who is going through or has gone through these traumatic events. If you are experiencing or have experienced GBSV (either recently or in the past), you will find information about support services for survivors, including emergency contacts at the following website:

Mental Health and Wellness at King's - King's University College

You can reach someone supports at Kings by emailing Care@kings.uwo.ca or calling 519-930-4640 to reach a social worker who can offer help.

You can also reach Western's Gender-Based Violence & Survivor Support Case Manager by email or by calling 519-661-3568.

You can reach someone supports at Kings by emailing Care@kings.uwo.ca or calling 519-930-4640 to reach a social worker who can offer help.

3. Statement on Use of Electronic Devices

Use of Electronic Devices: Unless explicitly stated otherwise, you are not allowed to have a cell phone, or any other electronic device, with you during tests or examinations. Unauthorized possession of such a device during a test or examination constitutes an academic offence.

Use of Laptops, Tablets, and Smartphones in the Classroom: King's University College at Western University acknowledges the integration of new technologies and learning methods into the curriculum. The use of electronic devices such as laptop computers, tablets, or smartphones can contribute to student engagement and effective learning. At the same time, King's recognizes that instructors and students share jointly the responsibility to establish and maintain a respectful classroom environment conducive to learning.

The use of electronic devices by students during lectures, seminars, labs, etc., shall be for matters related to the course at hand only. Students found to be using electronic devices for purposes not directly related to the class may be subject to sanctions under the Student Code of Conduct; see https://kings.uwo.ca/sites/2025/assets/files/about/governance/policies/board/Board%20Policy%203_1%20Code%20of%20Student%20Responsibilities%20and%20Conduct.pdf

Inappropriate use of electronics (e.g., laptops, tablets, smartphones) during lectures, seminars, labs, etc., creates a significant disruption. As a consequence, instructors may choose to limit the use of electronic devices in these settings. In addition, in order to provide a safe classroom environment, students attending in-person class sessions are strongly advised to operate laptops with batteries rather than power cords.

4. Statement on Academic Offences

King's is committed to academic integrity. Scholastic offences are taken seriously and students are directed to read the appropriate policy, specifically, the definition of what constitutes a Scholastic Offence, is posted at https://www.uwo.ca/univsec/pdf/academic_policies/appeals/scholastic_offences.pdf

It is expected that students will submit work that is truly their own, completed without external assistance (human or artificial) except as explicitly permitted by the course instructor. Check with your instructor on what tools, including generative AI (ChatGPT, translation tools, grammar-checking tools) are permitted in the course. Because a tool is permitted in one course, that does not mean it is permitted in other courses.

All required papers may be subject to submission for textual similarity review to the commercial plagiarism detection software under license to the University for the detection of plagiarism. All papers submitted for such checking will be included as source documents in the reference database for the purpose of detecting plagiarism of papers subsequently submitted to the system; see [https://elearningtoolkit.uwo.ca/tools/Originality Reports - TurnItIn.html](https://elearningtoolkit.uwo.ca/tools/Originality%20Reports%20-%20TurnItIn.html).

Computer-marked multiple-choice tests and/or exams may be subject to submission for similarity review by software that will check for unusual coincidences in answer patterns that may indicate cheating.

5. Copyright of Course Material

Lectures and course materials, including PowerPoint presentations, tests, outlines, and similar materials are protected by copyright. Faculty members are the exclusive owner of copyright in those materials they create. Students may take notes and make copies for their own use. Students may not allow others to reproduce or distribute lecture notes and course materials publicly (whether or not a fee is charged) without the express written consent of a faculty member. Unauthorized sharing of class content is subject to academic discipline.

Similarly, students own copyright in their own original papers and exam essays. If a faculty member wishes to post a student's answers or papers on the course website, they should ask for the student's written permission.

6. Use of Recordings

Participants in this course are not permitted to record the sessions, except where recording is an approved accommodation and/or the participant has the prior written permission of the instructor. Unauthorized recording and/or sharing of class content is subject to academic discipline.

7. Policy on Attendance

Any student who, in the opinion of the instructor, is absent too frequently from class or laboratory periods in any course, will be reported to the Dean of the Faculty offering the course, after due warning has been given. On the recommendation of the department concerned, and with the permission of the Dean of that Faculty, the student will be debarred from taking the regular examination in the course.