# BUSADMIN I602

**Economics and Business Statistics   
Fall 2021 Course Outline**

**DeGroote School of Business**

**McMaster University**

COURSE OBJECTIVE

The first part of the course (i.e., Statistics) provides practitioners with the knowledge of fundamental statistical techniques, and their applications in business and economics. The emphasis in the course is neither the mathematical derivation of test statistics, nor the technical proofs for various approaches but instead on understanding how and when to apply statistical techniques to managerial problems, and on the translation of statistical output into actionable recommendations.

The second part of the course (i.e., Economics) introduces how the economic paradigm can be used to inform managerial decision making. The tools and techniques of economics provide a framework for assessing the trade-offs faced by managers in a competitive marketplace. These skills will be used to motivate evidence-informed judgments about alternative courses of action to produce creative, action-oriented, practical strategies to business challenges under various market structures.

INSTRUCTOR AND CONTACT INFORMATION

|  |  |  |
| --- | --- | --- |
| William Huggins | TBA | Hamidreza Khushro |
| Instructor | Teaching Assistant - Statistics | Teaching Assistant - Economics |
| [hugginsw@mcmaster.ca](about:blank) | XXXXXX@mcmaster.ca | khoshroh@mcmaster.ca |
| Office Hours: By appointment | Office Hours: TBA | Office Hours: TBA |
| Tel: (647) 289-9240 |  |  |
|  |  |  |
| LIVE Classes (Zoom): C01 W 2:30-4:30; C02 Th 11:30-1:30; C03 F 9:30-1130; C04 W 8:30-10:30am | | |

COURSE ELEMENTS

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Credit Value: | 3 | Leadership: | No | IT skills: | Yes | Global view: | Yes |
| Avenue: | Yes | Ethics: | Yes | Numeracy: | Yes | Written skills: | Yes |
| Participation: | No | Innovation: | No | Group work: | Yes | Oral skills: | No |
| Evidence-based: | Yes | Experiential: | Yes | Final Exam: | Yes | Guest speaker(s): | No |

COURSE DESCRIPTION

This course is focused on the integration of information into effective decision making for strategic action. Students will explore approaches to organizing and interpreting data and utilizing it as an evidentiary basis for economic decisions within the organization. Students will develop and hone proficiencies in asking good questions and using information to make beneficial and ethical decision that take account of the feedback of actions by other decision-making organizations.

The statistics part of the course will emphasize the application of statistical techniques and modeling for business decision-making. The focus is on applying the concepts of statistical inference to the real decision-making problems. The techniques developed in this part of the course can be applied not only to a variety of business problems, but also provide students with the critical skills required to assess the validity, significance, and interpretation of statistical results that they deal with during their education and careers. Topics will include sampling distributions, hypothesis testing, and an in-depth analysis of regression analysis.

The economics segment of the course develops the fundamental trade-offs faced by organizations regarding production decisions and orients these choices within the framework of various market structures. Managers use the logic of marginal analysis, the analysis and application of demand and cost concepts, and intelligent responses to strategic behavior and to external forces like government policy. Together with statistical and numerical techniques learned earlier, the analytical techniques developed in the second half are used to assess situations and develop courses of action.

LEARNING OUTCOMES

Upon completion of this course, students will be able to:

* Understand sampling distributions and the statistical relationships between variables.
* Structure and complete a hypothesis test informing some course of action.
* Build relevant regression models and identify common regression pitfalls.
* Identify data and situations which complicate hypothesis testing and regression analysis.
* Interpret regression models and use them to improve forecasting and decision-making.
* Utilize economic analytical techniques and forms of evidence to support decision-making
* Understand and anticipate risks and opportunities in the strategic interplay of competitors.
* Choose between and defend your choice of optimal responses to economic conditions.
* Assess where a country is in its business cycle, and be able to discern which factors will have a major impact on a country’s potential economic growth.
* Communicate economic concepts and recommendations to others persuasively using clear non-specialist language, in written and verbal form.

REQUIRED COURSE MATERIALS AND READINGS

* + - * Avenue registration for course materials: [http://avenue.mcmaster.ca/](about:blank)
      * TEXTBOOKS: I recommend the following texts but any comparable introductory statistics, and managerial economics texts will do. The ones below are supported by Pearson MyLab and include bundled rental and purchase options from the bookstore. Chapter readings for each topic correspond to these texts.
        + “Business Statistics”; 4th Canadian edition by Sharpe Deveaux et al (2020)
        + “Managerial Economics & Strategy”; 3rd Edition by Perloff and Brander (2020)

EVALUATION

**Components and Weights**

|  |  |  |
| --- | --- | --- |
| **Homework Assignments (10)** | (individual) | 10 x 2% = 20% |
| **Statistics Case – DUE Oct 18th 9am** | (group) | 20% |
| **Statistics Test – Nov 3rd, 9am (via A2L)** | (individual) | 20% |
| **Economics Project – DUE Dec 10th 11:59pm** | (group) | 20% |
| **Economics Test – Released Dec 13th** | (individual) | 20% |
| **Total** |  | **100%** |

**Grade Conversion**

At the end of the course, your overall percentage grade will be converted to your letter grade in accordance with the following conversion scheme:

|  |  |  |
| --- | --- | --- |
| **Letter Grade** | **Percent** | **Points** |
| A+ | 90-100 | 12 |
| A | 85-89 | 11 |
| A- | 80-84 | 10 |
| B+ | 75-79 | 9 |
| B | 70-74 | 8 |
| B- | 60-69 | 7 |
| F | 00-59 | 0 |

***ASSIGNMENT DETAILS***

**HOMEWORK ASSIGNMENTS (10 x 2% = 20%) - INDIVIDUAL**

Each of TEN weekly problem sets (due Sunday night) is worth 2% for a total of 20%. These will be released over Avenue and should be submitted to the assignment dropbox posted there by Sunday 11:59pm EST.

**STATISTICS CASE (20%) - GROUP**

The statistics group case is worth 20%and will be completed and graded in your learning groups. Instructions will be posted on Avenue along with a dropbox for submissions.

**STATISTICS TEST (20%) - INDIVIDUAL**

The test for the stats portion of the course will take place during the mid-session exam week and will be administered via Avenue to Learn as a “quiz”. It is open-book, open-note, and you can use a spreadsheet to do your calculations if you like.

**ECONOMICS PROJECT (20%) - GROUP**

This project requires collaborative effort with your learning group to apply the lessons from class to carry out a detailed economic analysis of a Canadian industry of the group’s choice. Your final report should be 2000-3000 words excluding figures, sources, and appendices. More details will be released in the first week of the second half of the course.

**ECONOMICS TEST (20%) - INDIVIDUAL**

This take-home exam (covering only the second half of the course) will involve a mix of quantitative and qualitative questions. Submissions will be checked for plagiarism.

On-Line Pedagogy

To ensure the course objectives are met, you will have a regular schedule of synchronous and asynchronous engagement to maintain each week.

* **Asynchronous:** Read the slides and watch the videos supporting the first weekly topic. Review the textbook chapter(s) for specific details, examples, and greater depth.
* **Synchronous:** Read the slides for the second weekly topic and attend the live lecture held during the SECOND scheduled class time (Wednesdays/Thursdays). Check-in with the TA during office hours for clarification and help with concepts (not the homework…)
* **Asynchronous:** Review the textbook chapter(s) covering the second topic for specific details, examples, and greater depth. Complete the weekly homework assignment and meet with your team to collaborate on the group projects.

Communication and Feedback

Students that are uncomfortable in directly approaching an instructor regarding a course concern may send a confidential email to the Program Director. Students who wish to correspond with instructors or TAs directly via email must send messages that originate from their official McMaster University email account. This protects the confidentiality and sensitivity of information as well as confirms the identity of the student. Marks for all evaluation activities will be posted on Avenue. Your final grade will come through Mosaic and will not be posted on Avenue.

Students should be aware that when they access the electronic components of this course, private information such as first and last names, user names for the McMaster e-mail accounts, and program affiliation may become apparent to all other students in the same course. The available information is dependent on the technology used. Continuation in this course will be deemed consent to this disclosure. If you have any questions or concerns about such disclosure, please discuss this with the course instructor.

Academic Dishonesty

You are expected to exhibit honesty and use ethical behaviour in all aspects of the learning process. Academic credentials you earn are rooted in principles of honesty and academic integrity. **It is your responsibility to understand what constitutes academic dishonesty.**

Academic dishonesty is to knowingly act or fail to act in a way that results or could result in unearned academic credit or advantage. This behaviour can result in serious consequences, e.g. the grade of zero on an assignment, loss of credit with a notation on the transcript (notation reads: “Grade of F assigned for academic dishonesty”), and/or suspension or expulsion from the university.

For information on the various types of academic dishonesty please refer to the [*Academic Integrity Policy*,](about:blank) located at [https://secretariat.mcmaster.ca/university-policies-procedures- guidelines/](about:blank) . The following illustrates only three forms of academic dishonesty:

* plagiarism, e.g. the submission of work that is not one’s own or for which other credit has been obtained.
* improper collaboration in group work.
* copying or using unauthorized aids in tests and examinations.

Authenticity/Plagiarism Detection

***Some courses (this one!)*** use a web-based service (Turnitin.com) to reveal authenticity and ownership of student submitted work. For courses using such software, students will be expected to submit their work electronically either directly to Turnitin.com or via an online learning platform (e.g. A2L, etc.) using plagiarism detection (a service supported by Turnitin.com) so it can be checked for academic dishonesty.

Students who do not wish their work to be submitted through the plagiarism detection software must inform the instructor before the assignment is due. No penalty will be assigned to a student who does not submit work to the plagiarism detection software.

**All submitted work is subject to normal verification that standards of academic integrity have been upheld** (e.g., on-line search, other software, etc.). For more details about McMaster’s use of Turnitin.com please go to [www.mcmaster.ca/academicintegrity.](about:blank)

Courses With an On-Line Element

***Some courses may*** use on-line elements (e.g. e-mail, Avenue to Learn (A2L), LearnLink, web pages, capa, Moodle, ThinkingCap, etc.). Students should be aware that, when they access the electronic components of a course using these elements, private information such as first and last names, user names for the McMaster e-mail accounts, and program affiliation may become apparent to all other students in the same course.

The available information is dependent on the technology used. Continuation in a course that uses on-line elements will be deemed consent to this disclosure. If you have any questions or concerns about such disclosure please discuss this with the course instructor.

Online Proctoring

**Some courses may** use online proctoring software for tests and exams. This software may require students to turn on their video camera, present identification, monitor and record their computer activities, and/or lock/restrict their browser or other applications/software during tests or exams. This software may be required to be installed before the test/exam begins.

Conduct Expectations

As a McMaster student, you have the right to experience, and the responsibility to demonstrate, respectful and dignified interactions within all of our living, learning and working communities. These expectations are described in the [*Code of Student Rights & Responsibilities*](about:blank) (the “Code”). All students share the responsibility of maintaining a positive environment for the academic and personal growth of all McMaster community members, **whether in person or online**.

It is essential that students be mindful of their interactions online, as the Code remains in effect in virtual learning environments. The Code applies to any interactions that adversely affect, disrupt, or interfere with reasonable participation in University activities. Student disruptions or behaviours that interfere with university functions on online platforms (e.g. use of Avenue 2 Learn, or Zoom for delivery), will be taken very seriously and will be investigated. Outcomes may include restriction or removal of the involved students’ access to these platforms.

Missed Academic Work

***Missed Assignments or Case Studies***

Where students miss a regularly scheduled test for legitimate reasons as determined by the Student Experience – Academic (MBA) office, the weight for that test/participation will be distributed across other evaluative components of the course at the discretion of the instructor.  Documentation explaining such an absence must be provided to the Student Experience – Academic (MBA) office within five (5) working days upon returning to school.

To document absences for health related reasons, please provide to Student Experience – Academic (MBA) office the [Petition for Relief for MBA Missed Term Work](about:blank) and the [McMaster University Student Health Certificate](about:blank) which can be found on the DeGroote website at [http://mbastudent.degroote.mcmaster.ca/forms-and-applications/](about:blank)

Please do not use the online McMaster Student Absence Form as this is for Undergraduate students only. University policy states that a student may submit a maximum of three (3) medical certificates per year after which the student must meet with the Director of the program.

To document absences for reasons other than health related, please provide Student Experience – Academic (MBA) office the [Petition for Relief for MBA Missed Term Work](about:blank) and documentation supporting the reason for the absence.

Students unable to submit their work at the posted dates due to the following reasons: religious; work-related (for part-time students only); representing university at an academic or varsity athletic event; conflicts between two overlapping scheduled mid-term exams; or other extenuating circumstances, have the option of applying for special arrangements. Such requests must be made to the Student Experience – Academic (MBA) office at least ten (10) working days before the scheduled due date along with acceptable documentation.  Instructors cannot themselves allow students to unofficially write make-up exams/tests.  Adjudication of the request must be handled by Student Experience – Academic (MBA).

If any assessment is missed without a valid reason, students will receive a grade of zero (0) for that component.  They are re-weighted if an accommodation is made.

***Missed Final Examinations***

A student who misses a final examination without good reason will receive a mark of 0 on the examination.

All applications for deferred and special examination arrangements must be made to the Student Experience – Academic (MBA) office. Failure to meet the stated deadlines may result in the denial of these arrangements. Deferred examination privileges, if granted, must be satisfied during the examination period at the end of the following term. There will be one common sitting for all deferred exams.

Failure to write an approved deferred examination at the pre-scheduled time will result in a failure for that examination, except in the case of exceptional circumstances where documentation has been provided and approved. Upon approval, no credit will be given for the course, and the notation N.C. (no credit) will be placed on the student’s transcript. Students receiving no credit for a required course must repeat the course. Optional or elective courses for which no credit is given may be repeated or replaced with another course of equal credit value.

Requests for a second deferral or rescheduling of a deferred examination will not be considered.

Any student who is unable to write a final examination because of illness is required to submit the [Application for Deferred MBA Final Examination](about:blank) and a statement from a doctor certifying illness on the date of the examination. The [Application for Deferred MBA Final Examination](about:blank) and the [McMaster University Student Health Certificate](about:blank) can be found on the DeGroote website at [http://mbastudent.degroote.mcmaster.ca/forms-and-applications/](about:blank) Please do not use the online McMaster Student Absence Form as this is for Undergraduate students only. Students who write examinations while ill will not be given special consideration after the fact.

In such cases, the request for a deferred examination privilege must be made in writing to the Student Experience – Academic (MBA) office within five business days of the missed examination.

Special examination arrangements may be made for students unable to write at the posted exam time due to compelling reasons (for example religious, or for part-time students only, work-related reasons):

* Students who have religious obligations which make it impossible to write examinations at the times posted are required to produce a letter from their religious leader stating that they are unable to be present owing to a religious obligation.
* Part-time students who have business commitments which make it impossible to write examinations at the times posted are required to produce a letter on company letterhead from the student’s immediate supervisor stating that they are unable to be present owing to a specific job commitment.

In such cases, applications must be made in writing to the Student Experience – Academic (MBA) office at least ten business days before the scheduled examination date and acceptable documentation must be supplied.

If a student is representing the University at an academic or athletic event and is available at an overlapping scheduled time of the test/examination, the student may write the test/examination at an approved location with an approved invigilator, as determined by the Student Experience – Academic (MBA) office. In such cases, the request for a deferred examination privilege must be made in writing to the Student Experience – Academic (MBA) office within ten business days of the end of the examination period.

Note: A fee of $50 will be charged for a deferred exam written on campus and a fee of $100 for deferred exams written elsewhere. In cases where the student’s standing is in doubt, the Graduate Admissions and Study Committee may require that the student with one or more deferred examination privileges refrain from re-registering until the examination(s) have been cleared.

Academic Accommodation of Students with Disabilities

Students with disabilities who require academic accommodation must contact [Student Accessibility Services](about:blank) (SAS) at 905-525-9140 ext. 28652 or [sas@mcmaster.ca](about:blank) to make arrangements with a Program Coordinator. For further information, consult McMaster University’s [*Academic Accommodation of Students with Disabilities*](about:blank) policy.

Accommodation For Religious, Indigenous or Spiritual Observances (RISO)

Students requiring academic accommodation based on religious, indigenous or spiritual observances should follow the procedures set out in the [RISO](about:blank) policy. Students should submit their request to their Faculty Office ***normally within 10 working days*** of the beginning of term in which they anticipate a need for accommodation or to the Registrar's Office prior to their examinations. Students should also contact their instructors as soon as possible to make alternative arrangements for classes, assignments, and tests.

Copyright and Recording

Students are advised that lectures, demonstrations, performances, and any other course material provided by an instructor include copyright protected works. The Copyright Act and copyright law protect every original literary, dramatic, musical and artistic work, **including lectures** by University instructors. The recording of lectures, tutorials, or other methods of instruction may occur during a course. Recording may be done by either the instructor for the purpose of authorized distribution, or by a student for the purpose of personal study. Students should be aware that their voice and/or image may be recorded by others during the class. Please speak with the instructor if this is a concern for you.

Potential Modification to the Course

The instructor and university reserve the right to modify elements of the course during the term. The university may change the dates and deadlines for any or all courses in extreme circumstances. If either type of modification becomes necessary, reasonable notice and communication with the students will be given with explanation and the opportunity to comment on changes. It is the responsibility of the student to check their McMaster email and course websites weekly during the term and to note any changes.

Acknowledgement of Course Policies

Your registration and continuous participation (e.g. on Avenue, in the classroom, etc.) to the various learning activities will be considered to be an implicit acknowledgement of the course policies outlined above, or of any other that may be announced during classes and/or on Avenue. It is your responsibility to read this course outline, to familiarize yourself with the course policies and to act accordingly. Lack of awareness of the course policies cannot be invoked at any point during this course for failure to meet them. It is your responsibility to ask for clarification on any policies that you do not understand.

Course Schedule

|  |  |  |  |
| --- | --- | --- | --- |
| Week | Asynchronous Video Lectures(Supporting Chapters) | Synchronous Lectures(Supporting Chapters) | Deliverables Due |
| 1 | Visualizing Data (4,5) | Probability (8) | Stats HW 1 |
| 2 | Sampling and Distributions (9,10) | Confidence and Hypothesis Testing (13) | Stats HW 2 |
| 3 | Difference of Means Tests (14,12) | F, ANOVA, and Chi Tests (15,12) | Stats HW 3  **Case Due** |
| 4 | Correlation and Regression (6,7) | Building and Using Models (18,19) | Stats HW 4 |
| 5 | Multiple Regression (20,21) | Time Series Regression (22) | Stats HW 5 |
| 6 | **MIDTERM EXAM VIA AVENUE TO LEARN, DATE TBA** | | |
| 7 | Economics of the Firm (1) | Supply and Demand Basics (2,3.1) | Econ HW 6 |
| 8 | Production and Costs (5,6) | Consumer Choice (4) | Econ HW 7 |
| 9 | Competitive Markets (8) | Uncompetitive Markets (9,11) | Econ HW 8 |
| 10 | Market Regulation and Industry Analysis (16) | Introduction to Macroeconomics,  Aggregate Demand & Supply | Econ HW 9 |
| 11 | Business Cycles | Economic Growth | Econ HW 10  **Project Due** |

* ***You have undoubtedly noticed the 3-4 chapters covered per week. You are NOT expected to read all of this. The chapter references are provided if you are seeking out more detailed explanations, examples, proofs, formulae for test statistics, etc***