

Advanced Analytics | MSCI:9110:EXB/C | Spring 2019

Course Instructor

[Samuel Burer](#)

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Office Hours: By appointment or via email

Class Meeting Location, Dates, and Times. Room 304 of the Cedar Rapids Center on Tuesdays, January 15 to April 2, from 6:00 PM to 9:40 PM

Prerequisites. MSCI:9100 or MBA:8150

Required Text. (none)

Course Academic Home

[Department of Management Sciences](#)

DEO: Barrett Thomas

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Program Goals. The administrative home of this course is the Business Analytics Graduate Program within the Department of Management Sciences in the Tippie College of Business, which governs academic matters relating to the course. This program has learning goals that drive decisions about curriculum and assignments within its courses. These goals are that graduates will: (1) exhibit knowledge and skills relevant to data and its application in business; (2) create and communicate solutions to data-related business problems that impact their organizations and communities; (3) understand and contemplate ethical and privacy issues arising in their own work; (4) demonstrate the ability to be effective team members in a diverse and complex world.

Course Description and Goals. This course is a continuation of the core course *Business Analytics* (MSCI:9100, formerly known as *Business Analytics*). The purpose of the course is to provide a more in-depth treatment of quantitative techniques that are useful for management decision-making. The main topics of the course are optimization methods, advanced regression techniques, forecasting, and time series methods. As in *Business Analytics*, the emphasis of the course is on the practical application of analytical techniques to problems from different functional areas of business. Example applications include marketing research, supply chain procurement, and financial portfolio selection. There are no background requirements other than *Business Analytics*, but it is assumed that students taking the course are interested in quantitative techniques.

Media/System Requirements. Please check the ICON course site frequently for announcements, assignments, etc. Each student should have access to a laptop computer which

they can bring to each class and on which they are allowed to install the open-source software R and RStudio from the Internet. Microsoft Excel is also required for the course.

Grading Criteria and Coursework. The coursework breakdown is as follows:

- 5% online pre-quizzes
- 20% mini-quizzes (lowest two scores dropped)
- 35% final exam
- 20% group memo
- 20% group presentation

Near the end of the course, all students will be given a chance to submit peer evaluations for members of their group. If evidence arises that a particular student has not participated fully, then that student's grade will be reduced to a level decided upon by the professor.

Final grades will be assigned according to the following planned curve, which has been approved by the Business Analytics Graduate Program (however, the professor reserves the right to deviate from this curve if deemed necessary):

- A range: \approx 50% of students
- B range: \approx 50% of students
- C, D, F: as needed

In addition, the A range and B range will be equally divided into +/- designations.

The following are *Course-Specific Policies and Guidelines*.

Late Assignments and Make-Up Exams. All assignments are expected on time. You may turn in an assignment late, but you will receive a 10% deduction for each day that it is late, including the first day.

Expectations of Student Academic Integrity. Because I regard this class as any job responsibility, it seems prudent to clarify in advance the policy on academic integrity. Given the professional nature of the Business Analytics program, it is unlikely that a student in this class would turn in work which is not his or her own. However, if I determine that any assignment, project, paper or test was not written solely by the student(s) whose name(s) appears on the project, or material taken from other sources is not appropriately cited, the student(s) involved will not pass this course and may be subject to program-level discipline.

The administrative home of this course is the Tippie College of Business, which governs academic matters relating to the course such as the add/drop deadlines, the second-grade-only option, issues concerning academic misconduct, and how credits are applied for various graduation requirements. Different colleges might have different policies. As a registered student in a course in the Tippie College of Business, you are responsible for the *Collegiate Policies and Guidelines* listed below.

Please also note that students of this program are subject to the policies, procedures, and

requirements of the Graduate College and the University of Iowa. For additional details, students should consult: the [Manual of Rules and Regulations of the Graduate College](#), applicable sections of the [University of Iowa Catalog](#), and [Policies and Regulations Affecting Students](#).

Tippie Honor Code. The Tippie College of Business has an Honor Code, and you must abide by it in completion of all assignments. Integrity is a reflection of your character and is critical for creating meaningful and lasting relationships. One part of integrity is abstaining from acts like cheating, so cheating on any assignment in this class will result in an appropriate consequence, usually a zero for the grade in question and, if that penalty does not reduce the grade, a penalty of a full letter grade reduction. In addition, all incidents of cheating will be reported to the appropriate academic offices, and the student may be placed on disciplinary probation, be suspended, or even permanently expelled, depending on the severity of the offense.

If a student has been found in violation of this policy, they will first be notified directly, then I will report to the appropriate program office. Faculty and students can report Academic Misconduct via the college website.

Privacy As part of this course, your name will be revealed to other students in the class. If you have concerns, please contact me immediately.

Lecture Capture Policy. As a service to students, the program offers lecture capture of most of its courses. This allows students to access video and audio recordings of the class, after the class has been recorded. As a student, you can opt out of being visible in the recording. Unless otherwise noted, this course is being recorded, and will be available to all enrolled members of the class under a password protected website (the ICON course site). I may choose at various points (i.e. during exams or guest speakers) to not record the class.

Fairness and Freedom of Expression. Every student is entitled to the same intellectual freedom I have. I will respect that freedom, and I am obliged to protect your freedom to learn, regardless of your religion, race, sex, sexual orientation, gender identity, or political views, or on your agreement or disagreement with my positions pertaining to matters of controversy within the discipline. I will do my best to provide you with a fair and impartial evaluation of your work, consistent with articulated standards for this course.

Complaint Procedures. If at any time you have concerns about this class or your performance in it, please contact me directly. If you do not feel that your concern has been resolved satisfactorily, you should contact the Department Executive Officer (DEO) who oversees the department offering this course (Barrett Thomas, 319-335-0938, barrett-thomas@uiowa.edu).

As a registered student in a course through the University of Iowa, the following *University Policies and Guidelines* apply to you.

Accommodations for Disabilities. The University is committed to providing an educational experience that is accessible to all students. If you have a diagnosed disability or any other condition that would impair your ability to complete the course requirements as stated

above, please inform me as early in the semester as possible, but no later than two weeks prior to the scheduled activity. Students needing accommodations must register with [Student Disability Services](#), (SDS): [visit this page](#) to obtain a Student Academic Accommodation Request (SAAR) form. The form will specify what course accommodations are reasonable for that student. The office is located at 3100 Burge Hall, 319-335-1462.

Mental Health. Students are encouraged to be mindful of their mental health and seek help if they are feeling overwhelmed or incapable of meeting course expectations. For assistance with the class, students are encouraged to talk to the faculty member. For additional advice or support, students are encouraged to contact University Counseling Services at University Capital Centre Suite 1950 or 3223 Westlawn South (319-335-7294) for same day appointments (Mon-Fri 8:00 AM-4:30 PM). After hours, we encourage you to call the Johnson County Crisis Line at 319-351-0140 or 911 if you are in immediate danger.

Sexual Harassment. Sexual harassment subverts the mission of the University and threatens the well-being of students, faculty, and staff. The University will not tolerate sexual harassment, nor will it tolerate unwelcomed behavior of a sexual nature toward members of the University community when that behavior creates an intimidating or hostile environment for employment, education, on-campus living, or participation in a University activity. As a member of the university community you have a responsibility to report concerns of sexual harassment immediately at the [Office of the Sexual Misconduct Response Coordinator](#).

Multicultural Holidays. Students compelled by their religious convictions to refrain from attending class on specific days must request instructor permission during the first few days of the session. If this request is denied, a student may address concerns according to [University Procedures](#).

Sustainability. The University is committed to demonstrating sustainability practices within all facets of the institution. Students are encouraged to utilize recycled materials and use as few natural resources as possible (such as by making use of digital forms of note taking, as appropriate). Recycling of all paper materials is expected. Learn more at the [Office of Sustainability](#).

| Date | Event | Time / Due |
|----------------------|--------------------|-------------------|
| Monday, January 14 | Online Pre–Quiz 1 | due 11:59 PM |
| Tuesday, January 15 | Meeting 1 | 6:00–9:40 PM |
| Monday, January 21 | Online Pre–Quiz 2 | due 11:59 PM |
| Tuesday, January 22 | Meeting 2 | 6:00–9:40 PM |
| Tuesday, January 22 | Mini–Quiz 1 | 6:00–6:15 PM |
| Monday, January 28 | Online Pre–Quiz 3 | due 11:59 PM |
| Tuesday, January 29 | Meeting 3 | 6:00–9:40 PM |
| Tuesday, January 29 | Mini–Quiz 2 | 6:00–6:15 PM |
| Monday, February 4 | Online Pre–Quiz 4 | due 11:59 PM |
| Tuesday, February 5 | Meeting 4 | 6:00–9:40 PM |
| Tuesday, February 5 | Mini–Quiz 3 | 6:00–6:15 PM |
| Sunday, February 10 | Group Memo | due 11:59 PM |
| Monday, February 11 | Online Pre–Quiz 5 | due 11:59 PM |
| Tuesday, February 12 | Meeting 5 | 6:00–9:40 PM |
| Tuesday, February 12 | Mini–Quiz 4 | 6:00–6:15 PM |
| Monday, February 18 | Online Pre–Quiz 6 | due 11:59 PM |
| Tuesday, February 19 | Meeting 6 | 6:00–9:40 PM |
| Tuesday, February 19 | Mini–Quiz 5 | 6:00–6:15 PM |
| Monday, February 25 | Online Pre–Quiz 7 | due 11:59 PM |
| Tuesday, February 26 | Meeting 7 | 6:00–9:40 PM |
| Tuesday, February 26 | Mini–Quiz 6 | 6:00–6:15 PM |
| Monday, March 4 | Online Pre–Quiz 8 | due 11:59 PM |
| Tuesday, March 5 | Meeting 8 | 6:00–9:40 PM |
| Tuesday, March 5 | Mini–Quiz 7 | 6:00–6:15 PM |
| Monday, March 11 | Online Pre–Quiz 9 | due 11:59 PM |
| Tuesday, March 12 | Meeting 9 | 6:00–9:40 PM |
| Tuesday, March 12 | Mini–Quiz 8 | 6:00–6:15 PM |
| Tuesday, March 26 | Meeting 10 | 6:00–9:40 PM |
| Tuesday, March 26 | Group Presentation | 6:00–9:40 PM |
| Tuesday, April 2 | Meeting 11 | 6:00–9:40 PM |
| Tuesday, April 2 | Final Exam | 6:00–9:00 PM |