Syllabus

Stat for Business and Economics
BSAD 210 FALL 2015

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	Department of Business and Economics
	Montgomery College—Rockville
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Office Hours	MWF 10:20 – 10:50; 1:00 – 1:30
	T 2:00 – 4:00
	And by appointment
Course Information	CRN #21070 MWF 11:00am to 11:50pm HU 115
	CRN #21068 MWF 12:00pm to 12:50pm HU 115
Course Length	08/31/2015 to 12/20/2015
Course Materials	All course materials (lectures, practice exams, syllabus) will be available on my website and on Blackboard.

I.   Course Description

An introductory course in the business and economic application of descriptive and inferential statistics. The meaning and role of statistics in business and economics, frequency distributions, graphical presentations, measures of central tendency and dispersion, probability, discrete and continuous probability distributions, inferences pertaining to means and proportions, and regression and correlation, time series analysis, and decision theory will be discussed.

Prerequisites: High school algebra or its equivalent or consent of department.

Assessment levels: ENGL 101/101A; MATH 093/096; READ 120. Three hours each week.

II.   Resources

- Anderson/Sweeney/Williams/Camm/Cochran—Essentials of Statistics for Business and Economics, 7th edition, Looseleaf version. ISBN: 978-1-133-62965-8
- You must sign up and use Blackboard; homework will be on Blackboard.

III.   Student Learning Outcomes

Upon completion of this course, the student will be able to:
1) Ascertain the appropriate use of and be able to calculate various measures of central tendency and dispersion.

2) Ascertain the appropriate use of various discrete as well as continuous probability distributions.
3) Calculate and distinguish between various types of probability for one or more events
4) Describe data using measures of central tendency and dispersion as well as coefficients of skewness and/or kurtosis.
5) Develop and apply a time series model for the purpose of forecasting.
6) Develop and apply regression and correlation models.
7) Evaluate probabilistic statements for discrete as well as continuous probability distributions.
8) Make inferences based upon large as well as small samples through the development of one-tailed and two-tailed tests of hypotheses pertaining to population parameters.
9) Organize and present data in a tabular as well as a graphical format.

IV.   Format and Procedures

This course is made up mostly of lecture with class discussion and class activities to underline important concepts. Class discussion is paramount to the class, since I find interaction of this sort particularly valuable in understanding the statistical ideas and how they fit into the world.

V.   My Assumptions

I assume you have a basic curiosity about the world around you. I assume you are familiar with basic algebra and can correctly interpret diagrams and tables. I assume you will do the indicated readings.

VI.   Your Responsibilities

You are responsible for all information in class even if you are late or absent. You are also responsible for checking your campus email daily. Course changes, suggestions for study, and other important messages will be posted by campus email. Bear in mind your Montgomery College email is the official means of communication.

You will turn off cell phones during exams and during class. Keep disruptions (e.g. side conversations) at a minimum (aka zero).

If you have a question, you are strongly encouraged to email me or visit my office hours. Your method of contact should be through my email address at Montgomery College. Do *not* email me through other methods, including Blackboard. I will not respond to such messages.

VII.   Blackboard & My Website

My personal website contains all class materials including lecture notes, practice exams, syllabus, and homework. Please note that just because lecture notes are posted online does *not* mean class is optional. These notes are there to help you participate in class without having being distracted by writing down material. You may also access course materials through Blackboard.

All file names are structured a particular way. Understanding this system will prove useful if you've downloaded many files and need to retrieve a particular item. Each file name always begins with what class the document is for, followed by the time of year and classes per week (if relevant), followed by the type of document, and then the subsection of that type.

Here are three examples:

- pmacro2syllabusFh.docx
    - "pmacro" means this pertains to ECON 201, principles of macroeconomics.
    - "2" means this document is for a class that meets twice a week.
    - "syllabus" means this is the syllabus.
    - "F" means this document pertains to the fall semester.
    - "h" means this document is for the honors section. If the document does not have an "h" after it, then that syllabus is for the non-honors section.
- pmicro3l06
    - "pmacro" means this pertains to ECON 202, principles of microeconomics.
    - "3" means this is for a class that meets three times a week.
    - "l" means this is a lecture (note is a lower-case "L" and not a one).
    - "06" means this is lecture number 6.
- statse02p01a
    - "stats" means this pertains to BSAD 210, business statistics.
    - "e02" means this is a practice exam for exam 2.
    - "p01" means this is the first practice exam available (there might be more than one for the same exam available in the future).
    - "a" means this is the answer key for that practice exam. If the document does not have an "a" after it, then that document is a blank exam without answers. I suggest you take that exam under simulated time pressure.

VIII.   Standards of College Behavior

This section is quoted from the Student Code of Conduct. For more information, please visit http://cms.montgomerycollege.edu/EDU/Verified_-_Policies_and_Procedures/PDF_Versions/42001_Student_Code_of_Conduct/.

The College seeks to provide an environment where discussion and expression of all views relevant to the subject matter of the educational forum are recognized as necessary to the educational process.

However, students do not have the right to interfere with the freedom of the faculty to teach or the rights of other students to learn, nor do they have the right to interfere with the ability of staff to provide services to any student.

Faculty and staff set the standards of behavior that are within the guidelines and spirit of the Student Code of Conduct or other College policies for classrooms, events, offices, and areas, by announcing or posting these standards early in the semester.

If a student behaves disruptively in the classroom, an event, an office, or an area after the instructor or staff member has explained the unacceptability of such conduct and the consequences that will result; the student may be asked to leave that classroom, event, office, or area for the remainder of the day. This does not restrict the student's right to attend other scheduled classes or appointments.

If the student does not leave, the faculty or staff member may request the assistance of Security.

The faculty or staff member must communicate with the student about the incident before the next class meeting to resolve the issue. If a second incident occurs that warrants removal from class, the faculty member again communicates with the student and must send a written report about the incident to the Dean of Student Development with a description of the incident and whether or not the incident is being referred to the formal disciplinary process.

The Dean of Student Development or designated instructional Dean of Workforce Development and Continuing Education should be informed in writing about any situation that should be addressed through the formal disciplinary process. The faculty or staff member will provide the Dean of Student Development with a written summary of the facts or conduct on which the referral is based within 48 hours of the incident for appropriate and effective disciplinary process, which must include the date, time, place, and a description of the incident.

IX. Academic Dishonesty

This section is quoted from the Student Code of Conduct. For more information, please visit http://cms.montgomerycollege.edu/EDU/Verified_-_Policies_and_Procedures/PDF_Versions/42001_Student_Code_of_Conduct/.

The maintenance of the highest standards of intellectual honesty is the concern of every student, faculty and staff member at Montgomery College. The College is committed to imposing appropriate sanctions for breaches of academic honesty.

See the above link for more information concerning what constitutes academic dishonesty and misconduct as well as possible sanctions imposed as punishment.

X. Disability Support Services

Any student who needs an accommodation due to a disability should make an appointment to see the course instructor during office hours. In order to receive accommodations, a letter from Disability Support Services will be needed. Furthermore, any student who may need assistance in the event of an emergency evacuation must identify the Disability Support Services Office.

XI. Veterans' Services

If you are a veteran or on active or reserve status and you are interested in information regarding opportunities, programs, and/or services, please visit the Combat2College website at http://www.montgomerycollege.edu/combat2college/.

XII.   Attendance

Students are expected to attend all class sessions. In cases involving excessive absences from class, the instructor may drop the student from the class, but you are ultimately responsible for dropping yourself from the course. Auto-drop should not be assumed. Excessive absence is defined as one more absence than the number of classes per week during a fall or spring semester; the number of absences is pro-rated for accelerated sessions.

XIII.   Withdrawal and Refund Policy

It is the student's responsibility to drop a course. Non-attendance of classes or failure to pay does not constitute official withdrawal. To view specific drop deadlines, log into your MyMC account, click on "My Class Schedule" under "Student Quick Links." Select the current term and click "View Drop Deadline Dates" at the bottom of the page.

XIV.   Audit Policy

All students registered for audit are required to consult with the instructor before or during the first class session in which they are in audit status, and students are required to participate in all course activities unless otherwise agreed upon by the student and instructor at the time of consultation.

XV.   Delayed Opening of Closing of the College

On occasion, Montgomery College will announce a late opening or early closing of a specific campus or the entire college because of weather conditions or other emergencies.
- If a class can met for 50% or more of its regularly scheduled meeting time *or* if the class can meet for 50 minutes or more, it will meet.
- Montgomery College will always operate on its regular schedule unless otherwise announced. Depending on the nature of the incident, notifications of emergencies and changes to the College's operational status will be communicated through one or more communication methods include the College's web page.

XVI.   Course Changes

The instructor reserves the right to alter the schedule of the course if necessary but will notify the students of any changes to the schedule before the changes are implemented.

XVII. Grading, Evaluation, and Assessment Procedures

Weighing of Assignments

Assignment	Percentage
Blackboard Homework	1% each; lowest two dropped (10% total)
Exams	20% each, lowest is 15% (55% total)
Final	25%
Participation	10%

Blackboard Homework. There will be twelve homework assignments completed through Blackboard. The lowest two will be dropped.

Exams. The three exams will comprise of short answer, true/false and justify, and multiple choice. Since all exam dates are listed here, you will be expected to attend them. Failure of attendance results in a zero for the exam. Exceptions will only be made in extreme circumstances (such as a death in the family) and in those cases written proof (such as a death certificate) must be presented.

By default, each exam is worth 20% of your grade. To account for slow starts, bad days, etc., your *worst* exam is worth 15% rather than 20%.

The use of graphing calculators or any other calculator which can store equations or is built into a phone is not permitted.

You are allowed one 3" by 5" note card with the exam. You are allowed to put any information you deem important on it.

Final. The final is comprehensive. I suggest you review past exams to help prepare.

You are allowed one 3" by 5" note card with the final. You are allowed to put any information you deem important on it.

The final schedule for December is available now, on the college's website. You have signed up for these classes with this knowledge at hand. I will not let you take your final at a different time just because you don't like your schedule.

Challenge. Students are encouraged to challenge how any assignment was graded. To challenge the score on a question, *type* a paragraph explaining why your answer is the correct one and are thus deserving of additional points. I am not, repeat *not*, interested in reading about any mistakes you made but why you believe you were more correct than I gave credit.

Participation. I'm a strong believer that people learn best if they speak up. It's a good rule not just for learning but for life in general. However because there's a lot of material to cover, we cannot always have an in depth class discussion. Thus the expectations for participation reflect that—a substantive comment or question once a week will fulfill the requirement just fine.

Late/Make-Policy. For every 24-hour period (rounded up) an assignment is late, there is a 10% penalty. Weekends do not count towards this period (turning something in Monday when it was due Friday would count at a 10% penalty, not a 30% penalty). An assignment is late if it is not turned by the end of the class period on the day it is due. I will not accept assignments via email unless there is a reason I find compelling. This option is completely at my discretion and must be requested by you, the student.

If you miss an exam, you make appropriate arrangements with me and the Montgomery College Assessment Center. There is a form to fill out (the Faculty Test Request Form). I will not allow you to make up an exam after I've graded and passed it back.

XVIII. What's My Grade?

If you want to know your grade-to-date, multiply your score on each assignment by its weight (indicated in the previous section). Then divide by the total percent assigned so far. Compare the result with the grading scale (below) to determine your grade.

All assignments are out of 100 points. For participation, you'll want to adjust the weight of the participation for how far in the semester you are in. For example, if you want to know your grade about 20% into the semester, you'll want to give participation a 2% weight rather than a 10% weight.

Grading Scale (points or percent needed for specific grades). Your grade, for both the midterm and the semester, will be determined by how many points you've accumulated throughout the class (by the table below).

A: 90+ | B: 80-89.99 | C: 70-79.99 | D: 60-69.99 | F: 0-59.99

Note the strict bounds: if you get 89.89 points for the semester, that's a "B," not an "A." I will only "round up" if I feel it's appropriate. This may mean you:
- Regularly went above and beyond what's required for full credit (such as discussion participation);
- Exhibited increasing mastery of the material as the semester moved forward (impressive, since the material gets harder as the semester moves forward); and/or
- Consistently demonstrated an understanding of particularly important question(s), especially if your fellow students had trouble with such question(s).

Example. Now that he's completed his first exam, Henry wants to know his grade-to-date. Here are his grades so far:

Item	Score	Weight		Item	Score	Weight
Homework 1	100	1%		Participation	100	2.5%
Homework 2	40	1%		Exam 1	72	15%
Homework 3	80	1%				

Note that since it's so early on in the semester, we made Henry's discussion grade worth 2.5% (since we're one-fourth through the semester) rather than 10%.

Since all the homework is being adjusted by the same weight, we can add it all together first (305). And so:

$$305 \times 0.01 + 100 \times 0.025 + 76 \times 0.15$$

$$3.05 + 2.5 + 11.4 = 16.95$$

The total percent so far is:

$$1\% + 1\% + 1\% + 2.5\% + 15\% = 20.5\%$$

Now we divide:

$$\frac{16.95}{0.205} = 82.7$$

Despite his Exam 1 grade, Henry's grade-to-date is a B.

XIX. Tentative Schedule

The following table describes this course day-by-day. "#" indicates which numbered lecture is covered that day which will aid you finding the lecture notes on my website as well as what Unit it is in. "Text" indicates the chapter of the textbook we will be referencing that day.

Homework is always due the night before the review at 11:59pm. For example, there is a review on the 23rd of September. Thus, homework 1, 2, and 3 will be due on the 22nd of September at 11:59pm.

UNIT	DATE	#	TOPIC	TEXT
	08/31	01	Introduction & the Basics of Sampling	1
	09/02	02	Good and Bad Samples	7
	09/04	03	Central Tendency	3
	09/07		**NO CLASS—LABOR DAY**	
	09/09	04	Dispersion & Comparisons	3
	09/11	05	Of Data and Displays I	2, 3
I	09/14	06	Of Data and Displays II	2
	09/16	07	Correlation and Causation	3
	09/18	08	Law of Large Numbers	4
	09/21	09	The Normal Distribution and the CLT	6, 7
	09/23	—	Review **HOMEWORK 1-3 DUE ON 09/22**	N/A
	09/25		**EXAM 1**	

	Date	#	Topic	Ch.
II	09/28	10	Probability	4
	09/30	11	Expected Value	5
	10/02	12	Bayes' Theorem I	4
	10/05	13	Bayes' Theorem II	4
	10/07	14	Discrete Probability Functions I	5
	10/09	15	Discrete Probability Functions II	5
	10/12	16	Continuous Probability Distributions	6
	10/14	17	Confidence Intervals I	8
	10/16	18	Confidence Intervals II	8
	10/19	—	Review **HOMEWORK 4-7 DUE ON 10/18**	N/A
	10/21		**EXAM 2**	
III	10/23	19	Hypotheses and Types of Error	9
	10/26	20	A Tale of Two Tails	9
	10/28	21	Understanding Hypothesis Testing	9
	10/30	22	Avoiding Type II Errors I	N/A
	11/02	23	Avoiding Type II Errors II	N/A
	11/04	24	Comparing Two Populations I	10
	11/06	25	Comparing Two Populations II	10
	11/09	26	Comparing Two Populations III	10, 11
	11/11	27	Analysis of Variance	10
	11/13	—	Review **HOMEWORK 7-9 DUE ON 11/12**	N/A
	11/16		**EXAM 3**	
IV	11/18	28	Simple Linear Regression I	12
	11/20	29	Simple Linear Regression II	12
	11/23	30	Basics of Multivariable Regressions	13
	11/25 **11/27**		**NO CLASSES—THANKSGIVING BREAK**	
	11/30	31	Interpreting Multivariable Regressions	13
	12/02	32	Building a Multivariable Regression	13
	12/04	33	Time Series and Forecasting	N/A
	12/07	34	Adjusting for Seasonality I	N/A
	12/09	35	Adjusting for Seasonality II	N/A
	12/11	—	Review **HOMEWORK 10-12 DUE ON 12/10**	N/A
	12/14		**FINAL EXAM FOR THE 12PM CLASS: 12:30PM TO 2:30PM**	
	12/16		**FINAL EXAM FOR THE 11AM CLASS: 10:15PM TO 12:15PM**	

Note: This syllabus is subject to change at the discretion of the Professor.