Term Information

Effective Term	Summer 2021
Previous Value	*Autumn 2019*

Course Change Information

What change is being proposed? (If more than one, what changes are being proposed?)

Adding a 100% DL option.

What is the rationale for the proposed change(s)?

To give flexibility in how we offer some of our undergraduate major and minor courses.

What are the programmatic implications of the proposed change(s)?

(e.g. program requirements to be added or removed, changes to be made in available resources, effect on other programs that use the course)?

None

Is approval of the requrest contingent upon the approval of other course or curricular program request? No

Is this a request to withdraw the course? No

General Information

Course Bulletin Listing/Subject Area	Statistics
Fiscal Unit/Academic Org	Statistics - D0694
College/Academic Group	Arts and Sciences
Level/Career	Undergraduate
Course Number/Catalog	3201
Course Title	Introduction to Probability for Data Analytics
Transcript Abbreviation	Intr Prob for DA
Course Description	An introduction to probability and its role in statistical methods for data analytics. Equal emphasis is placed on analytical and simulation-based methods for quantifying uncertainty. Approaches to assessing the accuracy of simulation methods are discussed. Applications of probability and sampling to big-data settings are discussed.
Semester Credit Hours/Units	Fixed: 3

Offering Information

Length Of Course	14 Week, 12 Week
Flexibly Scheduled Course	Never
Does any section of this course have a distance education component?	Yes
Is any section of the course offered	100% at a distance
Previous Value	*No*
Grading Basis	Letter Grade
Repeatable	No
Course Components	Lecture
Grade Roster Component	Lecture
Credit Available by Exam	No
Admission Condition Course	No
Off Campus	Never
Campus of Offering	Columbus

Prerequisites and Exclusions

Prerequisites/Corequisites   Prereq: Math 1152, 1161.xx, 1172, 1181, or equiv; or permission of instructor.
Exclusions   Not open to students with credit for 4201 or Math 4530.
Electronically Enforced   Yes

Cross-Listings

Cross-Listings

Subject/CIP Code

Subject/CIP Code   27.0501
Subsidy Level   Baccalaureate Course
Intended Rank   Sophomore, Junior

Requirement/Elective Designation

Required for this unit's degrees, majors, and/or minors

Course Details

Course goals or learning objectives/outcomes
- Quantify uncertainty about events using mathematical descriptions of probability
- Quantify uncertainty about events using simulation methods
- Assess the quality and accuracy of simulation-based descriptions of uncertainty
- Update a description of uncertainty based on new information
- Identify appropriate probability models for experiments/data and summarize expected outcomes from such models
- Use correlation and conditional expectation to describe the relationship between two random variables
- Quantify uncertainty about summary statistics for large data sets

Content Topic List
- Definitions and interpretations of probability
- Conditional probability
- Random variables
- Simulating random events
- Assessing accuracy of simulation methods
- Correlation
- Sampling distributions
- Central limit theorem
- Sampling methods

Sought Concurrence   No

Attachments

- STAT3201_ONLINE.docx: DL syllabus

  (Syllabus. Owner: Craigmile,Peter F)

- STAT3201_INPERSON.docx: in-person syllabus

  (Syllabus. Owner: Craigmile,Peter F)

- DL_checklist_Stat 3201.docx: ASC-Tech DL checklist

  (Other Supporting Documentation. Owner: Craigmile,Peter F)

Comments

Workflow Information

Status	User(s)	Date/Time	Step
Submitted	Craigmile,Peter F	11/18/2020 10:35 AM	Submitted for Approval
Approved	Craigmile,Peter F	11/18/2020 01:22 PM	Unit Approval
Approved	Haddad,Deborah Moore	11/18/2020 03:30 PM	College Approval
Pending Approval	Jenkins,Mary Ellen Bigler Hanlin,Deborah Kay Oldroyd,Shelby Quinn Vankeerbergen,Bernadette Chantal	11/18/2020 03:30 PM	ASCCAO Approval

SYLLABUS: STAT 3201
INTRODUCTION TO PROBABILITY FOR DATA ANALYTICS - ONLINE

Course overview

Instructor

Instructor: TBD
Email address: TBD
Office hours: Virtual Hours via Carmen Zoom. Days and times TBD.
Office Location: TBD

Grader or Teaching Assistant

Will be announced later.

Course description

Statistics 3201 offers an introduction to probability and its role in statistical methods for data analytics. Equal emphasis is placed on analytical and simulation-based methods for quantifying uncertainty. Approaches to assessing the accuracy of simulation methods are discussed. Students should have some prior knowledge of basic programming. Applications of probability and sampling to big-data settings are also discussed.

Course learning outcomes

By the end of this course, students should successfully be able to:
1. Quantify uncertainty about events using mathematical descriptions of probability.
2. Quantify uncertainty about events using simulation methods.
3. Assess the quality and accuracy of simulation-based descriptions of uncertainty.
4. Update a description of uncertainty based on new information.

5. Identify appropriate probability models for experiments/data and summarize expected outcomes from such models.
6. Use correlation and conditional expectation to describe the relationship between two random variables.
7. Quantify uncertainty about summary statistics for large data sets.

Course materials

Required textbook:

Mathematical Statistics with Applications (7th edition) by Wackerly, Mendenhall and Sheaffer.

Course technology

For help with your password, university e-mail, Carmen, or any other technology issues, questions, or requests, contact the OSU IT Service Desk. Standard support hours are available at https://ocio.osu.edu/help/hours, and support for urgent issues is available 24x7.

- **Self-Service and Chat support:** http://ocio.osu.edu/selfservice
- **Phone:** 614-688-HELP (4357)
- **Email:** 8help@osu.edu
- **TDD:** 614-688-8743

Baseline technical skills necessary for online courses

- Basic computer and web-browsing skills
- Navigating Carmen

Technology skills necessary for this specific course

- CarmenZoom
- Collaborating in CarmenWiki
- Recording a slide presentation with audio narration
- Recording, editing, and uploading video

Necessary equipment

- Computer: current Mac (OS X) or PC (Windows 10+) with high-speed internet connection
- Webcam: built-in or external webcam, fully installed
- Microphone: built-in laptop or tablet mic or external microphone

Necessary software

- On occasion, the instructor may use the statistical software package called R (The R Project for Statistical Computing; http://www.r-project.org/) to illustrate certain aspects. Here is the information for obtaining R.
    - You can download R for Windows, Mac, and Linux, from the CRAN archive at https://cran.r-project.org.
    - An in-depth introduction to R is available at http://cran.r-project.org/doc/manuals/R-intro.pdf
    - Hands-on tutorials are available in the Swirl system, which you can learn about at http://swirlstats.com/. In particular, "R Programming: The basics of programming in R" is an appropriate first tutorial for students who have never used R.
- An easier to use interface to R is available in the software package RStudio. This package is available for Windows, Mac, and Linux and can be downloaded for free from http://rstudio.org. **Note that RStudio requires R to be installed.**
- Microsoft Office 365 ProPlus All Ohio State students are now eligible for free Microsoft Office 365 ProPlus through Microsoft's Student Advantage program. Each student can install Office on five PCs or Macs, five tablets (Windows, iPad® and Android™) and five phones.
    - Students are able to access Word, Excel, PowerPoint, Outlook and other programs, depending on platform. Users will also receive 1 TB of OneDrive for Business storage.
    - Office 365 is installed within your BuckeyeMail account. Full instructions for downloading and installation can be found https://ocio.osu.edu/kb04733.

Course delivery

The class is scheduled to meet three times per week on MWF. This course is delivered fully online -- no in-person meetings will take place.

Each week, live lectures will be delivered through CarmenZoom at the scheduled class times (see above). These lectures will be recorded and posted on the class website soon after. Links for the Zoom meetings will be posted well in advance on Carmen.

On occasion, instructional videos may be posted to the class website. Such videos will replace a live Zoom lecture and will contain new course material and worked examples. Students will be responsible for watching the videos, studying the new material and working through the examples presented in the videos or assigned as an exercise.

The vast majority of the course can be completed asynchronously, meaning that you will be able to study materials and work on assessments according to your own schedule. Throughout the

course, the balance between synchronous (live lectures) and asynchronous (posted videos) may change, based on the specific topic we are covering, or other factors.

The instructor will also initiate weekly discussion threads, which will be posted to Carmen. These threads may consist of: additional reading assignments, small computational exercises, a more challenging example or a leftover exercise from one of the lectures. You will be responsible for regularly reading the posts and for contributing your work to some of the threads, see the *Assignment Information* section below.

Weekly office hours will be held via CarmenZoom, at the times given above (see Instructor section).

Grading and faculty response

Grades

Assignment or category	Percentage
Homework	20
Quizzes	15
Participation in Discussion Boards	5
Midterm 1	20
Midterm 2	20
Final Exam	20
Total	100

Assignment information

Homework: There will be weekly homework assignments posted on the course website. Homework is due once per week, with dates and times provided as needed.

Quizzes: There will be weekly quizzes. These will be administered online, through Carmen. There will be a sufficiently large time window, but once you begin taking the quiz there will be a time limit for you to complete it. **Proctorio** will be used during the quizzes.

Discussion Boards Participation: Throughout the semester, the instructor will initiate online discussion threads. You are required to read each thread and familiarize yourself with the topic. A total of 5% of your grade will consist of your contribution to these discussion threads. You are required to contribute to a minimum of seven distinct topics. Your posts will be read and assessed by the instructor and evaluated based on two factors: (1) relevance to the topic and (2) significance of your contribution.

Exams: There will be two midterm exams and one final exam. All exams will be delivered remotely, via Carmen. The final exam will take place at the time and date established by the University. Information about the exams will be posted well in advance through the course website. **Proctorio** will be used during exams.

Late assignments

Generally, late assignments are not accepted and written documentation is required for missed assignments. If you are unable to complete an assignment on time, please get in touch with the instructor *as soon as possible* so you can discuss your situation.

Grading scale

93–100: A
90–92.9: A-
87–89.9: B+
83–86.9: B
80–82.9: B-
77–79.9: C+
73–76.9: C
70 –72.9: C-
67 –69.9: D+
60 –66.9: D
Below 60: E

Faculty feedback and response time

I am providing the following list to give you an idea of my intended availability throughout the course. (Remember that you can call **614-688-HELP** at any time if you have a technical problem.)

Grading and feedback

For large weekly assignments, you can generally expect feedback within **7 days**.

E-mail

I will reply to e-mails within **24 hours on school days**.

Discussion board

I will check and reply to messages in the discussion boards every **24 hours on school days**.

Attendance, participation, and discussions

Student participation requirements

Because this is a distance-education course, your attendance is based on your online activity and participation. The following is a summary of everyone's expected participation:

- **Logging in**: **AT LEAST ONCE PER WEEK**
  Be sure you are logging in to the course in Carmen each week, including weeks with holidays or weeks with minimal online course activity. (During most weeks you will probably log in many times.) If you have a situation that might cause you to miss an entire week of class, discuss it with me *as soon as possible.*

- **Office hours and live sessions**: **OPTIONAL OR FLEXIBLE**
  All live, scheduled events for the course, including my office hours, are optional. For live presentations, I will provide a recording that you can watch later. If you are required to discuss an assignment with me, please contact me at the beginning of the week if you need a time outside my scheduled office hours.

- **Participating in discussion forums**: **SEVERAL TIMES PER WEEK**
  As participation, throughout the semester, you are expected to read and contribute to class discussions. You can expect to post several times as part of our substantive class discussion on the week's topics.

Discussion and communication guidelines

The following are my expectations for how we should communicate as a class. Above all, please remember to be respectful and thoughtful.

- **Writing style**: While there is no need to participate in class discussions as if you were writing a research paper, you should remember to write using good grammar, spelling, and punctuation. Informality (including an occasional emoticon) is fine for non-academic topics.

- **Tone and civility**: Let's maintain a supportive learning community where everyone feels safe and where people can disagree amicably. Remember that sarcasm doesn't always come across online.

- **Citing your sources**: When we have academic discussions, please cite your sources to back up what you say. (For the textbook or other course materials, list at least the title and page numbers. For online sources, include a link.)

- **Backing up your work**: Consider composing your academic posts in a word processor, where you can save your work, and then copying into the Carmen discussion.

Other course policies

Health and safety

The Ohio State University Wexner Medical Center's Cornavirus Outbreak site (https://wexnermedical.osu.edu/features/coronavirus) includes the latest information about COVID-19 as well as guidance for students, faculty and staff.

I expect that you will read and follow the guidelines and requirements for campus safety, which are available at https://safeandhealthy.osu.edu.

Student academic services

Student academic services offered on the OSU main campus http://advising.osu.edu/welcome.shtml.

Student support services

Student support services offered on the OSU main campus http://ssc.osu.edu.

Academic integrity policy

Policies for this online course

- **Quizzes and exams**: You must complete the midterm and final exams yourself, without any external help or communication. Weekly quizzes are included as self-checks without points attached.
- **Written assignments**: Your written assignments, including discussion posts, should be your own original work. In formal assignments, you should cite the ideas and words of your research sources. You are encouraged to ask a trusted person to proofread your assignments before you turn them in--but no one else should revise or rewrite your work.
- **Reusing past work**: In general, you are prohibited in university courses from turning in work from a past class to your current class, even if you modify it. If you want to build on past research or revisit a topic you've explored in previous courses, please discuss the situation with me.
- **Falsifying research or results**: All research you will conduct in this course is intended to be a learning experience; you should never feel tempted to make your results or your library research look more successful than it was.
- **Collaboration and informal peer-review**: The course includes many opportunities for formal collaboration with your classmates. While study groups and peer-review of major

written projects is encouraged, remember that comparing answers on a quiz or assignment is not permitted. If you're unsure about a particular situation, please feel free just to ask ahead of time.

Ohio State's academic integrity policy

It is the responsibility of the Committee on Academic Misconduct to investigate or establish procedures for the investigation of all reported cases of student academic misconduct. The term "academic misconduct" includes all forms of student academic misconduct wherever committed; illustrated by, but not limited to, cases of plagiarism and dishonest practices in connection with examinations. Instructors shall report all instances of alleged academic misconduct to the committee (Faculty Rule 3335-5-487). For additional information, see the Code of Student Conduct http://studentlife.osu.edu/csc/.

Copyright disclaimer

The materials used in connection with this course may be subject to copyright protection and are only for the use of students officially enrolled in the course for the educational purposes associated with the course. Copyright law must be considered before copying, retaining, or disseminating materials outside of the course.

Statement on title IX

Title IX makes it clear that violence and harassment based on sex and gender are Civil Rights offenses subject to the same kinds of accountability and the same kinds of support applied to offenses against other protected categories (e.g., race). If you or someone you know has been sexually harassed or assaulted, you may find the appropriate resources at http://titleix.osu.edu or by contacting the Ohio State Title IX Coordinator, Kellie Brennan, at titleix@osu.edu

Accessibility accommodations for students with disabilities

The University strives to make all learning experiences as accessible as possible. If you anticipate or experience academic barriers based on your disability (including mental health, chronic or temporary medical conditions), please let me know immediately so that we can privately discuss options. To establish reasonable accommodations, I may request that you register with Student Life Disability Services. After registration, make arrangements with me as soon as possible to discuss your accommodations so that they may be implemented in a timely fashion. SLDS contact information: slds@osu.edu; 614-292-3307; slds.osu.edu; 098 Baker Hall, 113 W. 12th Avenue.

Accessibility of course technology

This online course requires use of Carmen (Ohio State's learning management system) and other online communication and multimedia tools. If you need additional services to use these technologies, please request accommodations with your instructor.

- Carmen (Canvas) accessibility
- Streaming audio and video
- Synchronous course tools

Your mental health

As a student you may experience a range of issues that can cause barriers to learning, such as strained relationships, increased anxiety, alcohol/drug problems, feeling down, difficulty concentrating and/or lack of motivation. These mental health concerns or stressful events may lead to diminished academic performance or reduce a student's ability to participate in daily activities. The Ohio State University offers services to assist you with addressing these and other concerns you may be experiencing. If you or someone you know are suffering from any of the aforementioned conditions, you can learn more about the broad range of confidential mental health services available on campus via the Office of Student Life's Counseling and Consultation Service (CCS) by visiting ccs.osu.edu or calling 614- 292-5766. CCS is located on the 4th Floor of the Younkin Success Center and 10th Floor of Lincoln Tower. You can reach an on call counselor when CCS is closed at 614-292-5766 and 24 hour emergency help is also available through the 24/7 National Suicide Prevention Hotline at 1-800-273- TALK or at suicidepreventionlifeline.org

Disclaimer

This syllabus should be taken as a fairly reliable guide for the course content. However, you cannot claim any rights from it and in particular we reserve the right to change due dates or the methods of grading and/or assessment if necessary. Any changes will be communicated to you through official course announcements.

Course schedule (tentative)

Week	Dates	Topics, Readings, Assignments, Deadlines
1	Week of 1/10	Introduction / Uncertainty in Data Analysis
2	Week of 1/17	Introduction to R / Exploratory data analysis
3	Week of 1/24	Introduction to probability
4	Week of 1/31	Independence / Conditional probability / Bayes Rule
5	Week of 2/7	Discrete distributions
6	Week of 2/14	Discrete distributions
7	Week of 2/21	Continuous distributions
8	Week of 2/28	Continuous distributions
9	Week of 3/7	Multivariate distributions / marginal / conditional distributions
10	Week of 3/21	Independence / Covariance
11	Week of 3/28	Multinomial distribution / Bivariate Normal distribution
12	Week of 4/4	Functions of random variables
13	Week of 4/11	Moment generating functions / Multivariate transformations
14	Week of 4/18	Sampling distributions
15	Week of 4/25	Central limit theorem

SYLLABUS: STAT 3201
INTRODUCTION TO PROBABILITY FOR DATA ANALYTICS - ONLINE

Course overview

Instructor

Instructor: TBD
Email address: TBD
Office hours: TBD
Office Location: TBD

Grader or Teaching Assistant

Will be announced later.

Course description

Statistics 3201 offers an introduction to probability and its role in statistical methods for data analytics. Equal emphasis is placed on analytical and simulation-based methods for quantifying uncertainty. Approaches to assessing the accuracy of simulation methods are discussed. Students should have some prior knowledge of basic programming. Applications of probability and sampling to big-data settings are also discussed.

Course learning outcomes

By the end of this course, students should successfully be able to:
1. Quantify uncertainty about events using mathematical descriptions of probability.
2. Quantify uncertainty about events using simulation methods.
3. Assess the quality and accuracy of simulation-based descriptions of uncertainty.
4. Update a description of uncertainty based on new information.

5. Identify appropriate probability models for experiments/data and summarize expected outcomes from such models.
6. Use correlation and conditional expectation to describe the relationship between two random variables.
7. Quantify uncertainty about summary statistics for large data sets.

Course materials

Required textbook:

Mathematical Statistics with Applications (7th edition) by Wackerly, Mendenhall and Sheaffer.

Course technology

For help with your password, university e-mail, Carmen, or any other technology issues, questions, or requests, contact the OSU IT Service Desk. Standard support hours are available at https://ocio.osu.edu/help/hours, and support for urgent issues is available 24x7.

- **Self-Service and Chat support:** http://ocio.osu.edu/selfservice
- **Phone:** 614-688-HELP (4357)
- **Email:** 8help@osu.edu
- **TDD:** 614-688-8743

Baseline technical skills necessary for online courses

- Basic computer and web-browsing skills
- Navigating Carmen

Technology skills necessary for this specific course

- CarmenZoom
- Collaborating in CarmenWiki
- Recording a slide presentation with audio narration
- Recording, editing, and uploading video

Necessary equipment

- Computer: current Mac (OS X) or PC (Windows 10+) with high-speed internet connection
- Webcam: built-in or external webcam, fully installed
- Microphone: built-in laptop or tablet mic or external microphone

Necessary software

- On occasion, the instructor may use the statistical software package called R (The R Project for Statistical Computing; http://www.r-project.org/) to illustrate certain aspects. Here is the information for obtaining R.
  - You can download R for Windows, Mac, and Linux, from the CRAN archive at https://cran.r-project.org.
  - An in-depth introduction to R is available at http://cran.r-project.org/doc/manuals/R-intro.pdf
  - Hands-on tutorials are available in the Swirl system, which you can learn about at http://swirlstats.com/. In particular, "R Programming: The basics of programming in R" is an appropriate first tutorial for students who have never used R.
- An easier to use interface to R is available in the software package RStudio. This package is available for Windows, Mac, and Linux and can be downloaded for free from http://rstudio.org. **Note that RStudio requires R to be installed.**
- Microsoft Office 365 ProPlus All Ohio State students are now eligible for free Microsoft Office 365 ProPlus through Microsoft's Student Advantage program. Each student can install Office on five PCs or Macs, five tablets (Windows, iPad® and Android™) and five phones.
  - Students are able to access Word, Excel, PowerPoint, Outlook and other programs, depending on platform. Users will also receive 1 TB of OneDrive for Business storage.
  - Office 365 is installed within your BuckeyeMail account. Full instructions for downloading and installation can be found https://ocio.osu.edu/kb04733.

Course delivery

The class is scheduled to meet in-person three times per week on MWF.

The instructor will also initiate discussion threads, which will be posted to Carmen. These threads may consist of: additional reading assignments, small computational exercises, a more challenging example or a leftover exercise from one of the lectures. You will be responsible for regularly reading the posts and for contributing your work to some of the threads; see the *Assignment Information* section below.

Weekly office hours will be held in-person, at the times given above (see Instructor section).

Grading and faculty response

Grades

Assignment or category	Percentage
Homework	20
Participation in Discussion Boards	5
Final Project	10
Midterm 1	20
Midterm 2	20
Final Exam	25
Total	100

Assignment information

Homework: There will be biweekly homework assignments posted on the course website. Homework will be due on dates announced in class.

Final Project: A class project will consist of a written report and will require use of the R software.

Discussion Boards Participation: Throughout the semester, the instructor will initiate online discussion threads. You are required to read each thread and familiarize yourself with the topic. A total of 5% of your grade will consist of your contribution to these discussion threads. You are required to contribute to a minimum of seven distinct topics. Your posts will be read and assessed by the instructor and evaluated based on two factors: (1) relevance to the topic and (2) significance of your contribution.

Exams: There will be two midterm exams and one final exam. The tentative midterm exam dates will be provided in class. The final exam will take place at the time and date established by the University. Information about the exams will be posted well in advance through the course website.

Late assignments

Generally, late assignments are not accepted and written documentation is required for missed assignments. If you are unable to complete an assignment on time, please get in touch with the instructor *as soon as possible* so you can discuss your situation.

Grading scale

93–100: A
90–92.9: A-
87–89.9: B+
83–86.9: B
80–82.9: B-
77–79.9: C+
73–76.9: C
70 –72.9: C-
67 –69.9: D+
60 –66.9: D
Below 60: E

Faculty feedback and response time

I am providing the following list to give you an idea of my intended availability throughout the course. (Remember that you can call **614-688-HELP** at any time if you have a technical problem.)

Grading and feedback

For homework assignments, you can generally expect feedback within **7 days**. For exams and the final project, you can expect feedback within **14 days**.

E-mail

I will reply to e-mails within **24 hours on school days**.

Discussion board

I will check and reply to messages in the discussion boards every **24 hours on school days**.

Attendance, participation, and discussions

Student participation requirements

The following is a summary of everyone's expected participation:

- **In-person attendance**: **EXPECTED**
  You are expected to attend all lectures.

- **Logging in**: **AT LEAST ONCE PER WEEK**
  Be sure you are logging in to the course in Carmen each week, including weeks with holidays or weeks with minimal online course activity. (During most weeks you will probably log in many times.) If you have a situation that might cause you to miss an entire week of class, discuss it with me *as soon as possible.*

- **Office hours**: **OPTIONAL OR FLEXIBLE**
  Attendance of my regularly scheduled office hours is optional. If you are required to discuss an assignment with me, please contact me at the beginning of the week if you need a time outside of my scheduled office hours.

- **Participating in discussion forums**: **ONCE PER WEEK**
  As participation, throughout the semester, you are expected to read and contribute to class discussions. You can expect to post once per week as part of our substantive class discussion on the week's topics.

Discussion and communication guidelines

The following are my expectations for how we should communicate as a class. Above all, please remember to be respectful and thoughtful.

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I expect that you will read and follow the guidelines and requirements for campus safety, which are available at https://safeandhealthy.osu.edu.

Student academic services

Student academic services offered on the OSU main campus http://advising.osu.edu/welcome.shtml.

Student support services

Student support services offered on the OSU main campus http://ssc.osu.edu.

Academic integrity policy

Policies for this online course

- **Exams and final project**: You must complete all exams and the final project yourself, without any external help or communication.

- **Written assignments**: Your written assignments, including discussion posts, should be your own original work. In formal assignments, you should cite the ideas and words of your research sources. You are encouraged to ask a trusted person to proofread your assignments before you turn them in--but no one else should revise or rewrite your work.

- **Reusing past work**: In general, you are prohibited in university courses from turning in work from a past class to your current class, even if you modify it. If you want to build on past research or revisit a topic you've explored in previous courses, please discuss the situation with me.

- **Falsifying research or results**: All research you will conduct in this course is intended to be a learning experience; you should never feel tempted to make your results or your library research look more successful than it was.

- **Collaboration and informal peer-review**: The course includes many opportunities for formal collaboration with your classmates. While study groups and peer-review of major written projects is encouraged, remember that comparing answers on an assignment is not permitted. If you're unsure about a particular situation, please feel free just to ask ahead of time.

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Statement on title IX

Title IX makes it clear that violence and harassment based on sex and gender are Civil Rights offenses subject to the same kinds of accountability and the same kinds of support applied to offenses against other protected categories (e.g., race). If you or someone you know has been sexually harassed or assaulted, you may find the appropriate resources at http://titleix.osu.edu or by contacting the Ohio State Title IX Coordinator, Kellie Brennan, at titleix@osu.edu

Accessibility accommodations for students with disabilities

The University strives to make all learning experiences as accessible as possible. If you anticipate or experience academic barriers based on your disability (including mental health, chronic or temporary medical conditions), please let me know immediately so that we can privately discuss options. To establish reasonable accommodations, I may request that you register with Student Life Disability Services. After registration, make arrangements with me as soon as possible to discuss your accommodations so that they may be implemented in a timely fashion. SLDS contact information: slds@osu.edu; 614-292-3307; slds.osu.edu; 098 Baker Hall, 113 W. 12th Avenue.

Accessibility of course technology

This online course requires use of Carmen (Ohio State's learning management system) and other online communication and multimedia tools. If you need additional services to use these technologies, please request accommodations with your instructor.

- Carmen (Canvas) accessibility
- Streaming audio and video
- Synchronous course tools

Your mental health

As a student you may experience a range of issues that can cause barriers to learning, such as strained relationships, increased anxiety, alcohol/drug problems, feeling down, difficulty concentrating and/or lack of motivation. These mental health concerns or stressful events may lead to diminished academic performance or reduce a student's ability to participate in daily activities. The Ohio State University offers services to assist you with addressing these and other concerns you may be experiencing. If you or someone you know are suffering from any of the aforementioned conditions, you can learn more about the broad range of confidential mental health services available on campus via the Office of Student Life's Counseling and Consultation Service (CCS) by visiting ccs.osu.edu or calling 614- 292-5766. CCS is located on the 4th Floor of the Younkin Success Center and 10th Floor of Lincoln Tower. You can reach an on call counselor when CCS is closed at 614-292-5766 and 24 hour emergency help is also available through the 24/7 National Suicide Prevention Hotline at 1-800-273- TALK or at suicidepreventionlifeline.org

Disclaimer

This syllabus should be taken as a fairly reliable guide for the course content. However, you cannot claim any rights from it and in particular we reserve the right to change due dates or the methods of grading and/or assessment if necessary. Any changes will be communicated to you through official course announcements.

Course schedule (tentative)

Week	Dates	Topics, Readings, Assignments, Deadlines
1	Week of 1/10	Introduction / Uncertainty in Data Analysis
2	Week of 1/17	Introduction to R / Exploratory data analysis
3	Week of 1/24	Introduction to probability
4	Week of 1/31	Independence / Conditional probability / Bayes Rule
5	Week of 2/7	Discrete distributions
6	Week of 2/14	Discrete distributions
7	Week of 2/21	Continuous distributions
8	Week of 2/28	Continuous distributions
9	Week of 3/7	Multivariate distributions / marginal / conditional distributions
10	Week of 3/21	Independence / Covariance
11	Week of 3/28	Multinomial distribution / Bivariate Normal distribution
12	Week of 4/4	Functions of random variables
13	Week of 4/11	Moment generating functions / Multivariate transformations
14	Week of 4/18	Sampling distributions
15	Week of 4/25	Central limit theorem

Arts and Sciences Distance Learning Course Component Technical Review Checklist

Course: STAT 3201
Instructor: TBD
Summary: Introduction to Probability for Data Analytics

Standard - Course Technology	Yes	Yes with Revisions	No	Feedback/ Recomm.
6.1 The tools used in the course support the learning objectives and competencies.	X			• Carmen • Office 365 • R Software
6.2 Course tools promote learner engagement and active learning.	X			• Zoom lectures • Carmen Discussion boards
6.3 Technologies required in the course are readily obtainable.	X			All are available within Carmen which is free to use.
6.4 The course technologies are current.	X			All items are updated regularly.
6.5 Links are provided to privacy policies for all external tools required in the course.	X			All available privacy policies are included.
Standard - Learner Support				
7.1 The course instructions articulate or link to a clear description of the technical support offered and how to access it.	X			Links to 8HELP are provided, as is a link to R software support.
7.2 Course instructions articulate or link to the institution's accessibility policies and services.	X			a
7.3 Course instructions articulate or link to an explanation of how the institution's academic support services and resources can help learners succeed in the course and how learners can obtain them.	X			b
7.4 Course instructions articulate or link to an explanation of how the institution's student services and resources can help learners succeed and how learners can obtain them.	X			c
Standard – Accessibility and Usability				
8.1 Course navigation facilitates ease of use.	X			Recommend using the Carmen Distance Learning "Master Course" template developed by ODEE and available in the Canvas Commons to provide student-users with a consistent user experience in terms of navigation and access to course content.
8.2 Information is provided about the accessibility of all technologies required in the course.	X			All available accessibility policies are included.
8.3 The course provides alternative means of access to course materials in formats that meet the needs of diverse learners.	X			
8.4 The course design facilitates readability	X			
8.5 Course multimedia facilitate ease of use.	X			All assignments and activities that use the Carmen LMS with embedded multimedia facilitates ease of use. All other multimedia resources facilitate ease of use by being available through a standard web browser

Reviewer Information
- Date reviewed: 11/17/20
- Reviewed by: Ian Anderson

Notes: Good to go!

[a]The following statement about disability services (recommended 16 point font): Students with disabilities (including mental health, chronic or temporary medical conditions) that have been certified by the Office of Student Life Disability Services will be appropriately accommodated and should inform the instructor as soon as possible of their needs. The Office of Student Life Disability Services is located in 098 Baker Hall, 113 W. 12th Avenue; telephone 614- 292-3307, slds@osu.edu; slds.osu.edu.

[b]Add to the syllabus this link with an overview and contact information for the student academic services offered on the OSU main campus. http://advising.osu.edu/welcome.shtml

[c]Add to the syllabus this link with an overview and contact information for student services offered on the OSU main campus. http://ssc.osu.edu. Also, consider including this link in the "Other Course Policies" section of the syllabus.