



MATH-083: SUPPORT FOR INTRODUCTION TO STATISTICS

Effective Term

Fall 2026

BOT Approval Date

04/10/2025

Discipline

MATH - Mathematics

Course Number

083

Course Title

Support for Introduction to Statistics

Short Title

Support - Intro to Statistics

Credit Status (CB 04)

D - Credit - Degree applicable

Units**Lab Units**

1.00

Total Units

1.00

Hours**Lab Contact Hours**

48-54

Out of Class Hours Lab

0.00

Total Contact Hours

48 - 54

Total Out of Class Hours

0 - 0

Total Student Learning Hours

48 - 54

Is this an existing Extensive Lab?

Yes

Distance Education

Yes

Distance Education**Distance Education Type**

Both Fully Online and Hybrid Online

Fully Online Delivery Requirements:



- a. Students must be notified via the college schedule of classes and the syllabus for the class if proctored tests are required for this course
- b. Any planned face-to-face meetings, such as an orientation or study session, must be optional
- c. The MSJC curriculum committee requires the use of accessible, asynchronous discussion as a component of every fully online course

Are you using publisher content?

No

Regular Substantive Interaction

Instructor-to-student, student-to-student, and student-to-content contact shall be distributed in a manner that will ensure regular substantive interaction (RSI) is maintained not only weekly but also for the duration of the course. Instructor interactions should be equivalent in time, quality and consistency to the engagement students would receive in a face-to-face course—for example, through announcements, discussion participation, personalized feedback, video messages, or other instructional communications. Instructors are expected to be responsive to student inquiries within a 24-72 hour time frame excluding holidays. RSI will be maintained through a variety of methods:

- Orientation - Students must be oriented to the online and face-to-face portions at the start of the course.
- Announcements - Announcements using the course management system must be posted at least weekly to keep students current on course events, due dates, materials, etc.
- Discussion Forums - Content-related discussion forums within the designated CMS will include appropriate instructor participation and will be initiated and maintained, with timely feedback provided. Instructors are required to monitor the discussions and related activities to provide guidance and direction. Open-ended discussion boards may be used to further learning and interaction.
- MSJC Communication – Instructor will use MSJC-administered communication tools (such as email or the designated CMS communication tools) to regularly communicate with and provide ease of access to students.
- Timely Feedback - Timely feedback on student work will be provided by the instructor, which may include comments and/or rubrics, within the Grades area of the designated CMS.
- Scheduled Meetings – Hybrid and synchronous courses will meet at regularly scheduled times.

ADA Compliance - All course interactions and content must be designed with accessibility in mind and meet ADA requirements.

Catalog Description

This course covers the topics necessary to be successful in STAT-C1000. It covers prerequisite material from arithmetic, prealgebra, and algebra. It also covers some of the more basic concurrent material from statistics.

Requisites

Corequisite(s)

Corequisite(s) (must be taken simultaneously)

STAT-C1000.

Codes

TOP Code (CB 03)

1702.00 - Mathematics Skills

CIP Code

27.0301 - Applied Mathematics, General.

Repeatability Code

No

Grading Option

P/NP only

Minimum Qualifications

Minimum Qualifications	And/Or
Mathematics (Masters Required)	End

Learning Objectives

Learning Objectives

Learning Objective

- | |
|--|
| 1. Compare related data sets using numerical measures and appropriate graphical representations and communicate findings in the context of the data. |
| 2. Assess the place-value structure of a number and round off decimals to a specified location. |
| 3. Recognize, generate, and fluently use equivalent forms of fractions, decimals, and percentages. |
| 4. Relate proportionality to linearity as well as the concept of the slope. |
| 5. Produce the simplified answer using order of operations to evaluate statistical formulas by hand and with technology. |
| 6. Choose the right symbolic form for statistical measures of center, variation, and correlation along with their characteristics. |
| 7. Construct, use, and interpret mathematical models, specifically linear functions to represent and communicate relationships in quantitative data. |
| 8. Apply affective learning strategies consistently for success in college. |
| 9. Research and discuss social inequities using statistical data to highlight and celebrate the importance of diverse socioeconomic groups. |

Learning Outcome Information

Course Learning Outcomes

Learning Outcome

- | |
|---|
| 1. The student will analyze relevant data needed to communicate results. |
| 2. The student will apply numerical reasoning to support statistical analysis. |
| 3. The student will construct mathematical models, specifically linear functions to represent and communicate relationships in quantitative data. |

Content

Course Lab Content

1. A just-in-time approach to topics from Prealgebra and Beginning Algebra
 - a. Order of operations
 - b. Arithmetic operations on signed numbers
 - c. Comparing fractions, decimals, and percentages
 - d. Conversion of decimals and fractions to percents
 - e. Graphs in the cartesian coordinate system
 - f. Solutions to an equation by using graphs
 - g. Proportions and linearity
 - h. Rounding
2. Topics from Intermediate Algebra
 - a. Evaluating expressions
 - b. Linear functions
 - c. Constant rate of change
 - d. Graphing
 - e. Interpreting slope and y-intercept in context
3. Statistical Topics
 - a. Measures of center
 - i. Mean
 - ii. Median
 - b. Measures of spread
 - i. Variance
 - ii. Standard deviation
 - iii. Quartiles
 - iv. Percentiles

- c. Contingency tables
- d. Graphs of distributions of categorical data
 - i. Bar charts
 - ii. Pie charts
 - iii. Graph analysis of data related to diverse socioeconomic groups
- e. Graphs of univariate distributions of quantitative data
 - i. Histograms
 - ii. Boxplots
 - iii. Graph analysis of data related to underprivileged groups
- 4. Topics related to developing affective learning skills
 - a. Study skills
 - b. Organization and time management
 - c. Test preparation and test-taking skills
 - d. Self-assessments
 - i. Using performance criteria to judge and improve one's own work
 - ii. Analyzing and correcting errors on one's test
- 5. Seeking help and utilizing resources
 - a. Tutoring resources
 - b. Lab resources
 - c. Computer resources
 - d. Peer study groups

Methods of Instruction

Method

Activity

Integration

Activities will be used to illustrate statistical concepts by providing students with hands-on experience in comparing data using a variety of software tools. For example, students can analyze pollution rates from different regions to identify disparities among different social-economic groups and/or underrepresented populations.

DE Adaptations for MOI

Group activities can be adapted using built-in features of a course management system (CMS). For example, group activities can be facilitated via threaded discussions. Collaborations can be promoted by creating groups within the CMS. Instructions to group activities will meet accessibility requirements.

Method

Discussion

Integration

Discussions will be used to develop learning strategies to help students such as with time management, test preparation, and use of learning resources to be successful in the course.

DE Adaptations for MOI

Using accessible tools, discussions can be adapted via built-in features of a course management system. For example, student to student interactions can be facilitated using thematic discussion boards, peer review, and group assignments. Student to instructor discussions can be facilitated within the discussion board as well as the comment section of assignment submission within 7-10 days after submission.

Method

In-class Exercises

Integration

In-class exercises will provide students the opportunity for collaboration, allowing them to learn how to use mathematical tools and formulas. For example, they may construct and use mathematical models to solve linear regression applications.

DE Adaptations for MOI

Students will complete in-class exercises to develop skills which will enable them to, for example, identify and analyze the shapes of statistical graphs and their corresponding characteristics. In class accessible exercises are posted using CMS tools such as course pages and/or delivered via accessible videos and conferencing tools. Instructor feedback can be posted in the gradebook comments, discussion boards, and announcements between 7 - 10 days after submission.

Method

Lecture

Integration

Lecture will be used to develop the students' abilities with various types of statistical measurements, such as mean, median, percentiles, and quartiles.

DE Adaptations for MOI

Lectures can be adapted to a course management system to be delivered through accessible videos embedded to a course page. Lecture notes can be added utilizing a content editor, external links, presentation slides, and/or document files. All material will meet accessibility requirements. Written feedback is returned to the student/group via CMS between 7-10 days after submission.

Methods of Evaluation**Method**

Class Participation

Integration

Class participation will reinforce essential applications such as the manipulation of formulas both manually and with technology, as well as the interpretation of measures of relative standing to identify and discuss disparities across diverse cultures and socioeconomic groups. Participation will be evaluated based on the accuracy of formula use and the quality of interpretations.

DE Adaptations for MOE

Class participation is monitored through the CMS by keeping records of students' submissions and interactions with classmates via discussion boards. Written feedback is returned to the student/group via CMS within 7-10 days after submission.

Method

Class Work

Integration

Classwork will be used to assess how well the student has grasped content. For example, this may include evaluation of formulas for measures of center. This will be done by checking classwork for completion and accuracy.

DE Adaptations for MOE

Class work will be used as a formative assessment and will be graded on their correctness such as when using formulas for measures of center. Evaluation of student's or group work are done by observing their work posted in assignments and/or discussion boards via the CMS. Written feedback is returned to the student/group via CMS within 7-10 days after submission. Rubrics and clear instructions are provided.

Method

Group Projects

Integration

Group projects, such as generating a linear function out of a set of data will be used to deepen students' statistical analysis and collaborative skills. They will be graded on how accurately and correctly students collect data, compute, and interpret their findings.

DE Adaptations for MOE

Group projects will be assigned and submitted through the course management system (CMS). Students can communicate with peers and the instructor through the discussion boards of the CMS. Students may be required to present their results through the creation of a slide presentation, a written report, or a prerecorded accessible video conference. Presentations will then be made available to the entire class in discussion boards and/or announcement via CMS. Feedback may be provided either through comments or within an accompanying rubric no more than 10 days after submission.

Method

Quizzes

Integration

Low-stake quizzes will be administered in class to assess various skills, such as the student's ability to compare data sets using numerical and graphical representations. They will be evaluated on accuracy of numerical values or graphs.

DE Adaptations for MOE

Low-stakes quizzes will be assigned, submitted, and graded through the course management system (CMS). Feedback can be delivered using the comment section or within an accompanying rubric no more than 10 days after submission. The instructions and the quizzes will meet accessibility requirements.

Assignments**Assignment Type**

Writing

In-class and/or outside of class

In-class

Formative or Summative

Formative

Assignment

Roll a pair of dice 50 times with a partner using technology and record the sum for each trial. Construct a histogram of the results and note any special characteristics of the shape of the graph. Form a conclusion about number of trials and normality.

How assignment will be adapted in online format

After completing the activity above individually, scan your work using a phone or scanner and submit it as a PDF through the CMS. Instructor feedback will be posted in the gradebook comments within 7-10 days after submission.

Assignment Type

Writing

In-class and/or outside of class

In-class

Formative or Summative

Summative

Assignment

Research current statistics related to any country or culture of your interest to uncover social inequities or celebrate cultural diversity. Use key terms and concepts such as mean, median, measures of spread and center to analyze the data obtained in your research. Construct visual summaries such as histograms, pie charts, and line graphs to display trends in the data. Identify and reflect on any social inequities or cultural differences from the obtained statistics.



How assignment will be adapted in online format

The assignment will be posted, submitted, and graded through the course management system (CMS). For example, the entire assignment can be embedded on CMS as a discussion and graphs will be created using accessible statistical technology. The feedback can be delivered using the comment section or within an accompanying rubric through the CMS between 7-10 days after submission. The instructions and the assignments will meet accessibility requirements

Assignment Type

Reading

In-class and/or outside of class

In-class

Formative or Summative

Formative

Assignment

Read the article: <https://www.medicalnewstoday.com/articles/math-anxiety-definition-symptoms-causes-and-tips#treatment> about math anxiety. Discuss with classmates on what leads to math anxiety and some suggestions for managing the symptoms. Reflect on your experience with math anxiety and identify what strategies you will adapt to your routine to cope with math anxiety and be successful in this class.

How assignment will be adapted in online format

The reading will be used as part of the instructions for a discussion. The assignment will be embedded, submitted, and graded in a discussion board through the course management system (CMS). The feedback can be delivered using the comment section or within an accompanying rubric through the CMS no more than 10 days after submission. The instructions and the assignments will meet accessibility requirements

Course Materials**Textbooks**

Introduction to Modern Statistics 2e, Çetinkaya-Runde, M., Hardin, J., OpenIntro, 2024 (\$0- 25): <https://www.openintro.org/book/ims/>

Statistics: Learning From Data 3e, Peck, R., Case, C., Cengage, 2024 (\$57-250): <https://www.cengage.com/c/new-edition/9780357758298/>

Introductory Statistics: Exploring the World Through Data 4e, Gould, R., Wong, R., Ryan, C., Pearson, 2025 (\$65-80): <https://www.pearson.com/en-us/subject-catalog/p/introductorystatistics/P200000011641/9780138242145>

Introductory Statistics 2e, Illowsky, B., Dean, S., OpenStax, 2023 (\$0): <https://openstax.org/details/books/introductory-statistics-2e>

Introductory Statistics: Analyzing Data with Purpose, The Dana Center Mathematics Pathways, Charles A. Dana Center, University of Texas at Austin, 2021 (\$0): <https://www.utdanacenter.org/products/introductory-statistics>

Open Educational Resources

Introductory Statistics 2e, Illowsky, B., Dean, S., OpenStax, 2023 (\$0):

Class Size Information**Class Size**

40

Class Size Category

A - Lecture/discussion 40

Diversity and Inclusion

Course Design and Materials: Course will incorporate diverse perspectives, authors, and examples that reflect a variety of cultures, identities, and lived experiences. Instructional materials will be reviewed regularly to ensure representation, inclusivity, and alignment with equity-minded practices across disciplines.

Inclusive Learning Environment: Instructors will establish classroom norms and policies that promote respect, civil discourse, and belonging in both online and face-to-face classes. Clear expectations for communication and engagement will support a learning space where all students feel valued and heard.

Accessible Instruction: Course content will be delivered using accessible design. Materials will follow accessibility guidelines within the CMS, including captioned media, readable document formats, and multiple means of engagement to support diverse learning.

Equitable Teaching Practices: Instructors will use transparent and grading criteria, varied assessment methods, and timely feedback to promote fairness and student success. Opportunities for revision, reflection, and multiple demonstrations of learning may be incorporated when appropriate to the discipline.

Culturally Responsive Pedagogies: Instructional strategies will encourage critical thinking about diverse perspectives and systems of power relevant to the course content. Faculty will foster opportunities for students to connect course material to real-world contexts.

Ongoing Reflection and Improvement: Faculty will engage in continuous professional development related to IDEAA principles and reflect on course practices using metacognition to identify opportunities for increased equity, inclusion, and accessibility.

Explain how diversity and inclusion(e.g., gender, culture/race, sexuality, etc.) is infused into the course.

The content highlights and discusses the tools necessary to research and interpret data related to various cultural communities and underrepresented groups of people. Assignments include readings, writing, and discussions centered around social inequities and the importance of diverse cultures. The objectives, content, and methods of instruction include the use of statistical data to research and discuss social inequities as well as celebrate cultural diversity. The method of instruction includes the use of statistics to identify disparities among different socioeconomic groups and/or underrepresented populations.

Describe how assignments, instruction, evaluation, course content, and interactions are contextualized for diverse learners promoting an equitable course.

The course is designed to allow a variety of methods of instruction and assessments to better support diverse learners. The methods of instruction include in class activities, discussions, group work, and lectures which altogether serve a variety of learning styles such as visual, verbal, physical, and logical. Also, an OER textbook was included which promotes equity by significantly lowering the cost of taking the course and removing additional barriers for learners. In addition, the class has been revised with the focus on accessibility and the assignments have been updated to provide students with the opportunity to reflect on their cultural frame of reference. The course offers many opportunities for students to connect their experiences with the terms and concepts presented in the course and to validate their life experience by seeing themselves in the material and research.

Interactions

Explain how the course will incorporate student-to-student interaction.

Students will interact with each other through in-class discussions on different topics such as collecting and organizing data and using technology to interpret results. Group activities are used to develop a deeper understanding of topics and provide opportunities for collaboration while centering student voices. For example, students will work together in groups to compare and contrast the air quality index data for predominantly low-income communities versus high-income communities.

Explain how the course will incorporate instructor-to-student interaction.

The instructor will facilitate student activities that reinforce the corequisite course content through various methods including verbal, auidal and visual communication. The instructor will also give immediate feedback on student activities as well as guide in class discussions. For example, the instructor will guide students in a discussion to determine if two variables are linearly related.

Explain how the course will incorporate student-to-content interaction.

Students will interact with lecture notes and material as well as software to aid in researching, analyzing, and drawing conclusions from relevant data. In-class activities for example will enable students to practice identifying and using correct statistical symbols and their respective characteristics such as the sample mean, variance and standard deviation.

Explain how the course will incorporate student-to-self interaction (metacognitive).

This course incorporates metacognition by encouraging students to actively monitor and modify their thought processes. For example, after learning the various rules of probability, students will reflect on the proper way of applying each rule and will be



encouraged to develop their own approach to computation and interpretation. Students are also encouraged to reflect on their own experience with math anxiety and learn strategies to overcome the anxiety and be successful in this course.

Key: 2079