STAT 101: INTRODUCTION TO STATISTICS

# Spring 2020

# INSTRUCTOR: Dr. Johnson

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* [**Web page**](http://www.oneonta.edu/stats): (http://ww.oneonta.edu/stats)
* **Office Hours**:
	+ **Mon. & Fri.: None**
	+ **Tues., Thurs**: 8:00-8:25; 11:20-11:50; ~1:30-2:20; 4:00-5:00
	+ **Wed**: unofficial hours, ~1:30-4:30 (check email to see if in)
	+ **Other**: by appointment, or just stop by

# COURSE INFORMATION

* **Section**: **STAT 101-07** (CRN 1003): Tuesday & Thursday 8:30 - 9:45 AM; 107 Fitzelle
* **Section**: **STAT 101-08** (CRN 1004): Tuesday & Thursday 10:00 - 11:15 AM; 107 Fitzelle
* **Section**: **STAT 101-09** (CRN 1005): Tuesday & Thursday 2:30 – 3:45 PM; 131 Fitzelle
* **Course Credit & Attributes**: 3 Semester Hours; Attributes: (LA), M2, M3
* **Key Dates & Deadlines**: Drop/Add ends Jan. 21; Interim Grades March 5; Last day to drop with a “W” March 20.
* **Final Exam Period Date, Time, and Location**:
	+ 8:30 AM (Section 07): Thursday April 30, 2020, **8:00-10:30,** Milne 305
	+ 10:00 AM (Section 08): Tuesday May 5, 2020, **8:00-10:30**, Milne 305
	+ 2:30 PM (Section 09): Thursday April 30, 2020, **2:00-4:30**, Location TBA

# GENERAL COURSE DESCRIPTION & OBJECTIVES

STAT 101 is an introductory level statistics course designed to introduce basic statistical concepts and develop one's ability to apply statistical techniques. Topics selected for the course may include, but are not limited to: statistical concepts; frequency distributions; sampling; experimental design; measures of central tendency; measures of variability; measures of position; graphing data; correlation & regression; confidence intervals; hypothesis testing; Chi Square; and statistical software.

The **College Catalog Course Description** reads as follows: **STAT 101 Introduction to Statistics 3 s.h.** Basic statistical concepts which may include steps in scientific research, measurements, sampling and experimentation; descriptive concepts such as tables, graphs and summary statistics; elementary probability concepts; sampling distributions, normal distribution; inferential methods such as estimation, hypothesis testing. Other topics may include chi square tests, correlation, regression. Use of a statistical software package. A-E only. Offered Fall and Spring. (LA, M3) *Prerequisite: at least 3 units of Regents high school math or*[*MATH 104*](http://www.oneonta.edu/undergradcatalog/math-104-college-algebra-and-trigonometry.asp#_blank) *or Math 151.*  (Source: *Undergraduate Catalog 2019-2020*)

The **SUNY GENERAL EDUCATION LEARNING OUTCOMES** for students addressed throughout this course include the ability to:

* Interpret and draw inferences from mathematical models such as formulas, graphs, tables and schematics;
* Represent mathematical information symbolically, visually, numerically and verbally;
* Employ quantitative methods such as, arithmetic, algebra, geometry, or statistics to solve problems;
* Estimate and check mathematical results for reasonableness; and,
* Recognize the limits of mathematical and statistical methods.

As a result of participation in this course students will be able to:

* Challenge basic assumptions of statistical results and summaries.
* Analyze a problem and apply appropriate statistical techniques.
* Arrive at one's own conclusions based upon the understanding of the statistical techniques used.

# INSTRUCTION METHODS

The course instruction may include any of the following teaching methods, depending upon the current topic: lecture; discussion; PowerPoint presentations; group activities; in-class laboratory experiences; and whatever else comes along.

* ***Note: This course is cumulative in nature and does get progressively more difficult. If at any time you have a question about the course material, please do not hesitate to see me for help***.

# COURSE MATERIALS

**REQUIRED**

* **Calculator:** A calculator with a square root function will be needed to complete some assignments and examination items. **A GRAPHING CALCULATOR IS NOT REQUIRED**. **[NOTE: YOU MAY NOT USE A CELL PHONE AS A CALCULATOR DURING CLASS, EXAMS, OR QUIZZES.]**
* **Primary Text:** Larson & Farber. **Elementary Statistics: Picturing the World.**  **Fifth Edition**, 2012, Pearson Education, Prentice Hall; available through online book vendors [cost < $10]**. A copy is on reserve in the library and one is located next to the photocopier outside my office.**
* **Supplemental Text:** Illowsky & Dean. Introductory Statistics. 2018 openstax, Rice University. Note: this is an Open Educational Resource text. A link to an online version is listed on the [course web page](http://www.oneonta.edu/stats) (http://www.oneonta.edu/stats).
* **Pencil(s)):** Examinations must be completed in pencil.

**AVAILABLE RESOURCES**

* **Reference Manual (online):** **SPSS@Oneonta****: Selected Introductory Statistical and Data Manipulation Procedures.** Gordon &Johnson. *NOTE:* This manual is available online under the **STAT 101** listing at (http://www.oneonta.edu/stats).
* **Reference Manual (online):** **Anatomy of Statistics.** Gordon & Johnson. Currently available as individual PowerPoint pages [online](http://www.oneonta.edu/stats) ( <http://www.oneonta.edu/stats>). > STAT 101.
* **Course Documents:** Additional course materials, such as problem answer keys, PowerPoint slides, and worksheets, are maintained online [here](http://www.oneonta.ed/stats) **(**http://www.oneonta.edu/stats) under the **STAT 101** > Supporting Materials link.
* **SPSS:** This statistical software program will be used throughout the course to complete some assignments. It is available in virtually all SUNY Oneonta PC-based computer labs, including those in the residence halls.

# GRADING

Grading will be based upon a total of **400 points** distributed among the following course components: **1)** **Examinations** (140 points); **2)** **Quizzes** (40 points); **3) Application Labs** (100 points); **4) Class Assignments** (50 points); and **5) SPSS Assignments** (50 points). The lowest Quiz grade and the lowest Class Assignment grade will be deleted (see **Dropped Grades** for exceptions**). Extra Credit** assignments are available at specified points during the course. Additional information regarding each of these components is noted below. The timeline for the dates of all assignments is contained on the **CLASS ASSIGNMENTS AND DUE DATES** sheet. All due dates are subject to change and may be affected by currently unforeseen factors, such as in-class projects or the need for additional time on a topic

1. **Examinations (140 points):** Two exams at 70 points each. By the nature of the course, exams are cumulative. If you miss an in-class exam, it must be taken BEFORE the next class. It is **your responsibility** to arrange a make-up time. As of the next class a grade of “N” (no grade) will be assigned unless a legal excuse has been presented.
2. **Quizzes (50 points):** Six 10-point quizzes. The lowest grade is dropped. Quizzes may be based upon current class topics, specified past topics, and assigned homework problems. Quiz items may include multiple choice, true/false, fill in the blank and computational problems. A missed quiz must be made up by 5 PM of the quiz day or during the **8:00 AM** office hour on the following class day. After the 8:00 AM Office Hour the quiz will no longer be available. It is **your responsibility** to address this as needed. **NOTE:** A missed quiz may not be dropped (see dropped grade section below).
3. **Application Labs (110 points):** The three assignments (35, 35 & 30 points) will test your statistics skills learned to date to analyze a data set. The use of SPSS will be required to complete these assignments.
4. **Class Assignments (50 points):** Six assignments at 10 points each. These assignments will be a combination of problems from the text and elsewhere. GRADING PROCESS: Item points based upon criteria noted for each assignment problem. Class Assignments are due at the beginning of class. Late assignments are subject to the general late assignment penalty stated below. The lowest submitted class assignment grade will be dropped. **NOTE:** Late assignments and missed assignments may not be dropped (see dropped grade section below).
5. **Statistical Software Assignments (50 points):** Sixn assignments at ten points each, focusing on the use of statistical software to analyze data. GRADING PROCESS: Item points based upon criteria noted for each assignment problem. SPSS assignments are due at the beginning of class. Late assignments are subject to the general late assignment penalty stated below. The lowest submitted SPSS assignment grade will be dropped. **NOTE:** Late assignments and missed assignments may not be dropped (see dropped grade section below).
6. **Extra Credit (est. 10-15 pts.):** This is a purely elective component of the course.

**- Elective assignments:** These assignments are: worth 1-2 points each (generally); distributed throughout the semester; will consist of about five questions per assignment; and not intended as group assignment. The points are equivalent to those associated with any other assignment noted above and are added to the total accumulated points at the end of the course.

**- Assignment Types (not all may be used):**

**Data Analysis:** The assignments may be drawn from data in the text or elsewhere. Generally, it will be necessary to use SPSS to address these assignments.

**Extended Topics:** An extension of topics beyond those covered in class. These will be self-instructional topics (e.g. means other than the arithmetic mean).

**Additional Topics:** This includes topics, such as experimental design and the scientific method, which are not addressed to any depth via class instruction.

**Other:** Additional extra credit may be available through same-day assignments.

**- Grade Shift:** A grade shift resulting from the credit obtained from all completed Extra Credit assignments may not exceed one grade level (e.g. from C+ to a B-, not from C+ to a B) - even if you have accumulated sufficient extra credit for a two-grade level shift to occur.

***- Extra Credit assignments will not be accepted for any reason after the BEGINNING of the scheduled class time on their due dates. This includes students absent from class for ANY reason. There are no individual-student extra credit assignment options for this course. If you wait to the end of the course to seek extra credit, the opportunities will have passed you by.***

### LATE ASSIGNMENT PENALTY: All assignments are due at the beginning of the specified class period. Unless otherwise noted, assignments submitted after the start of class time on the due date will be subject to a penalty equal to 25% of the item’s original value plus whatever deductions resulting from problem review AND will not be eligible to be a dropped grade. Beyond the due date the assignment will no longer be accepted for credit. Individuals not in attendance to submit an assignment, for any reason (including those with a college-excused absence, e.g. sports), are not exempt from this penalty schedule and therefore should make arrangements to get the assignment delivered to me in advance of the class, if necessary. Documented medical situations will be reviewed as needed.



**Dropped Grades:** Course components 1) through 5) above total 430 points. The lowest quiz grade, class assignment grade, and SPSS grade will be dropped (30 points), provided neither of the following two conditions exist. First, any late assignment will not be dropped. Second, if you do not take a quiz or submit an assignment, it cannot become a dropped grade; rather it is an assignment you elected to not complete (recorded as an “N” grade). Two actual grades are dropped. An example of the dropped grade process is noted in the following table. [Note: Merely placing your name on an otherwise blank quiz or assignment sheet does not constitute an attempted assignment.]



**Grade Calculation:** At any point in time one can determine his/her current grade by dividing accumulated points by the total number of points to date. Baseball has curves, roads have curves, but this course does not. The adjacent table outlines the letter grades, numeric grade ranges and minimum points needed to attain a grade level.

**Current and Final grades** will be maintained on the Internet. This sheet will include all grades to date and a current overall grade (excluding extra credit). Only students providing an id, as outlined in class, and written permission to post their grades will have information included in the grade sheet. [**NOTE: See attendance policy for additional factors that may affect your grade.]**

# MISCELLANEA

**MEDICAL WARNING:** It is highly likely that the class will be in contact with food items to which some individuals may be allergic (e.g. chocolate, peanuts, etc.). While it would be good for me to know of potential allergies in advance, it is **your responsibility** to protect yourself in situations that may compromise your health.

**Academic Dishonesty:** Do not do this as it places both of us in an unacceptable situation. Students caught cheating will receive a grade not to exceed zero for the assignment and may be referred to the Disciplinary Review Board.

**Assignments:** As noted previously, assignments received late will incur a penalty equaling 25% of the initial assignment value and will not be accepted after the due date. This penalty may be waived if an officially recognized absence or a medical situation has occurred (documentation may be required). If you know you are not going to be in class, have someone else submit it, or email it. Extra Credit assignments are not accepted late for any reason.

**Attendance Policy:** Flagrant non-attendance, as defined by missing 25% or more of the classes to date, may result in a review of the student’s attendance by the academic dean and subsequent involuntary withdrawal. This withdrawal policy is valid through to the withdrawal date (October 25) after which a grade must be assigned. The general attendance policy for a course is left to the instructor to establish. Attendance in this course is important to your success.

* For this course, daily attendance will be taken.
* **Individuals missing more than three classes, for any reason (including legal absences), will forfeit any possibility of borderline grade adjustments.**
* **Individuals missing five or more classes, for any reason, will incur a one point penalty on the final grade upon his/her fifth missed class and an additional one-half point for each subsequent day missed (e.g. calculated final grade of 81, a B-, with six missed classes = 79.50, a C+ final grade, representing a deduction of one point for the first 5 days and one-half point for EVERY subsequent day).**
* Medical or other legal documentation will be taken into consideration, as appropriate, for the above situations.
* Students who do not attend a class meeting, for any reason, will be responsible for the material covered. It is not the instructor’s responsibility to provide individual instruction for material missed due to an absence.
* A student not in attendance by the second class meeting will be administratively withdrawn from the class.
* A student may be administratively withdrawn after the add/drop period once he/she has missed 25% of the classes.

**CELL PHONES:** At the start of class **cell phones are to be turned off and placed in the most inaccessible place you have**. They may not be used to complete problem computations – that’s what calculators are for. Individuals found using cell phones may be subject to a grade reduction of .25 points per occurrence (subtracted from the accumulated course points).

**Completion of Assignments:** You make work alone or with others in the completion of written assignments. However, keep in mind that you will be on your own when exams occur. If you work with someone else on a class or lab assignment, please submit only one copy of the assignment. **Extra credit opportunities are not intended as group assignments**.

**Examinations and Quizzes:** A missed exam must be made-up prior to the next class, at which time exams and answer keys are returned. Presentation of a legal excuse will be required after the next class session. Quizzes must be made up by 5 PM of the quiz day or during the **8:00 AM** office hour of the subsequent class day. It is **your responsibility**, not mine, to arrange a time to make up these assignments.

**Food & Other Items:** You are responsible for anything you bring into the classroom. Please respect the facility and clean up after yourself at the end of class. Recycle whenever possible.

**Show Steps:** Providing a final answer is not sufficient. All problems on assignments and examinations that require a series of steps to obtain an answer should have those steps **displayed in a clear and logical order**.

**Rounding:** Unless otherwise specified, round answers to the number of decimal points contained in the data, but not more than three decimal places. If using a calculator, carry all decimals on the calculator and round the final result.

**College Policies:** Students are responsible for a familiarity with the college’s academic rules and regulations (e.g. attendance, cheating) as presented in the *College Handbook* and/or the *Undergraduate Catalog.*

**ADA:** All individuals who are diagnosed with a disability are protected under the Americans with Disabilities Act, and Section 504 of the Rehabilitation Act of 1973. As such, you may be entitled to certain accommodations within this class. If you are diagnosed with a disability, please make an appointment to meet with Student Disability Services (SDS), 209 Alumni Hall, ext. 2137. All students with the necessary supporting documentation will be provided appropriate accommodations as determined by the SDS Office. It is entirely your responsibility to contact SDS and concurrently supply me with your accommodation plan, which will inform me exactly what accommodations you are entitled to. You will only receive accommodations once you provide me with an SDS accommodation plan. Any previously recorded grades will not be changed. Further information is available [here](http://www.oneonta.edu/development/sds/faculty_resources.asp): (http://www.oneonta.edu/development/sds/faculty\_resources.asp).

**Infrastructure**

**Invest**

**Tempus Fugit.**

**Carpe Diem.**

**Emergency Evacuation/Shelter-in-Place Procedures:** In the event of an emergency evacuation (i.e., fire or other emergency) classes meeting in **Fitzelle Hall** reassemble in the **IRC Lobby**. Complete details of the College’s emergency evacuation, shelter-in-place and other emergency procedures can be found [here](http://www.oneonta.edu/security) (<http://www.oneonta.edu/security>).

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# STAT 101: Introduction to Statistics – SPRING 2020

## CLASS ASSIGNMENTS AND DUE DATES

## Graded course components based upon 400 Total Points (430 available).

* See the course syllabus for further information regarding these items.Exams: 140 points – 2 at 70 points; see syllabus for make-up schedule.
* Quizzes (Q):50 points – six at 10 points each, lowest dropped; see syllabus for make-up schedule.
* Class Assignments (CA): 50 points – six, 10-point assignments; lowest dropped.
* Statistical Software (SS): 50 points – six, 10-point assignments; lowest dropped.
* Application Labs: 110 points – Three application labs.
* Extra Credit (EX): approx. 10-15 points:

1) Data Analysis & Other class related items possible.

2) Extra Credit items will not be accepted after their due dates.

3) There are no individual extra credit opportunities.

NOTE: This schedule is dependent upon class progress and therefore subject to change. Course topic/order may change and assignment due dates may shift. See syllabus for late submission of assignment penalties.

