



Independent Study | in Idaho

Math 1153
Statistical Reasoning

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Course Guide

Independent
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Mathematics 1153 Statistical Reasoning

Idaho State University
3 Semester-Hour Credits

Prepared by:

Jason Reed, M.S.
Lecturer, Mathematics
Idaho State University

RV: Jason Reed 1/2021

WR: Alan Egger, PhD; Amy Mills, M.N.S., 9/2010,

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Math 1153: Statistical Reasoning

3 Semester-Hour Credits: ISU

Welcome!

Whether you are a new or returning student, welcome to the Independent Study in Idaho (ISI) program. Below, you will find information pertinent to your course including the course description, course materials, course objectives, as well as information about assignments, exams, and grading. If you have any questions or concerns, please contact the ISI office for clarification before beginning your course.

Policies and Procedures

Refer to the ISI website at www.uidaho.edu/isi and select *Students* for the most current policies and procedures, including information on setting up accounts, student confidentiality, exams, proctors, transcripts, course exchanges, refunds, academic integrity, library resources, and disability support and other services.

Course Description

Descriptive statistics, probability, confidence intervals, and hypothesis testing for one and two parameters. Emphasis on applications to a wide variety of disciplines. ISU students: Satisfies Goal 3 of the General Education Requirements. Prerequisite: Math 1108 (Intermediate Algebra), or equivalent.

Required: Internet access, PC computer, calculator

3 graded Extended Problems, 3 Topic Certifications (graded self-study), 4 graded proctored exams

Students may submit up to 1 extended problems per week and 1 exam per day.

Before taking exams, students MUST wait for grades and feedback on assignments, which may take up to three weeks after date of receipt by the instructor.

ALL assignments and exams must be submitted to receive a final grade for the course.

Course Materials

Required Course Materials

- Warren, Carolyn, Kim Denley, and Emily Atchley. *Beginning Statistics*. 3rd ed. Mount Pleasant: Hawkes Learning /Quant Systems, Inc., 2021.
 - There is lifetime access to the courseware and eBook on the publisher's website with the purchase of the option below.
 - Purchasing Hawkes Learning Systems Beginning Statistics courseware (HLS for short) at <http://www.hawkeslearning.com> gives access to the ebook, *Beginning Statistics*. HLS parallels *Beginning Statistics* section by section. HLS provides the student with a means to practice and then certify mastery of the material. See *Hawkes Student Quick Start Guide on BbLearn*. **With the ebook, a physical copy of the book is not needed for this course.**
- Minitab 19 Statistical Software (The current version is Minitab 19, but this may change by the time you read this course guide. You should try to use the latest version of the software, but if you somehow obtain an older version, that will work, too.) You can access Minitab in one of the following ways. (I recommend the free method.)

- The University of Idaho has a license for Minitab. You can access the application remotely by visiting <http://vlab.uidaho.edu> and logging in with your NetID and password. You will need to download the Citrix Receiver application prompted for download at the VLabs site in order to use the programs featured there. More detailed instructions can be found in the Technology section below. (For more assistance, search the internet for How do I use VLab, University of Idaho, or contact the U of I computer help desk.)
- A license can be rented for a semester or more at www.minitab.com/en-US/academic/
- Ask the Math Department or Computer Center at your school if they have copies of Minitab for student use.

Additional Course Requirements

This course requires:

- A computer with Internet access (including email). Check in Hawkes Learning for the Minimum System Requirements for using the courseware.
- A scientific calculator. (Having a TI-83 or TI-84 is not essential but may be very useful as a time-saving device.)

Course Delivery

This course is available online. An electronic course guide is accessible through BbLearn at no additional cost. Refer to your Registration Confirmation Email for instructions on how to access BbLearn.

The BbLearn site has live links to:

- Minitab Statistical Courseware resources
- Extended Problem resources
- Hawkes Student Quick Start Guide

Technology: Minitab and Hawkes Learning Systems (HLS) Courseware

We will be using the following courseware (for full listings, see the links in the left-hand menu of the BbLearn Course.

1. Minitab 19 Statistical Software package
2. Hawkes Learning Systems (HLS) Beginning Statistics Courseware

Minitab Statistical Courseware

Minitab will do calculations and draw charts and graphs, freeing you to master the course content. Minitab output can be pasted into documents. This should be very valuable for you in preparing reports and papers for this and other classes. Much of the homework can be done either by hand or with Minitab. When practical, you should use both methods.

Minitab is very powerful, and we will only use a fraction of its power in this course. The textbook provides some examples of how to use *Minitab*, but only really touches the surface. In your textbook, see Appendix C: Getting Started with Minitab. Also, directions on how to use Minitab (and other technology options, including the TI-83 and 84) can be found by going to stat.hawkeslearning.com and navigating to Technology Instructions.

Hawkes Learning Systems (HLS) Beginning Statistics Courseware

Purchasing *Hawkes Learning Systems Beginning Statistics* courseware (HLS for short) at www.hawkeslearning.com includes access to the ebook, *Beginning Statistics*. The HLS Courseware

provides computer-based instruction, tutoring, and a means to practice and then certify (or show) your mastery of the material. (See *Lessons > Certification Assignments* in the course guide.) It will be key to your success in the course. HLS parallels *Beginning Statistics* section by section.

If you have any problems or questions about HLS Courseware, visit any of the following for help:

- HLS Support Center: <http://support.hawkeslearning.com/supportcenter/>
- 1-843-571-2825

Detailed instructions on accessing your HLS Courseware are in BbLearn under *Hawkes Student Quick Start Guide*.

Minitab Access through VLab

The University of Idaho has licenses for Minitab for students admitted to the University of Idaho. You can access the application remotely by following these instructions:

1. Go to <https://vlab.uidaho.edu>
2. Log in to VLab using your University of Idaho user name and password. (These are the same username and password that you use to log in to your University of Idaho email account.)
3. The first time you log in to VLab, you will be asked to install the Citrix Receiver. When prompted, please click the "Install" button.
4. Once the Citrix Receiver is installed, select Minitab 18 from the list of available programs. (When you attempt to connect to a local drive on your computer, the Citrix Receiver will ask you if you would like to allow it to access your local drives. You should allow access. The specifics of how to do this will depend on your web browser and operating system.)
5. Minitab should open in the standalone Citrix Receiver. (If VLab is unable to detect the Citrix Receiver, it will fall back to using a browser-based client to present your applications. While this works, the user experience is not as good as with the Citrix Receiver.)

(For information about VLab, and for a list of FAQs that may be helpful while following the instructions above, visit <http://www.uidaho.edu/infrastructure/its/departments/student-labs/vlab>)

Here is a link to Minitab support. <https://support.minitab.com/en-us/minitab/18/>

This support is easy to navigate, and you have the ability to search Minitab Support, if needed. Once you arrive at this site, click "Help and How-To". From there you can select from one of the following:

Graphs - for "how-to" instructions for graphing the various types of plots and displays you will need to include in your Extended Problems.

Statistics - for "how-to" instructions for computing the basic statistics of this course.

Minitab 17 Statistical Courseware video instructions.

<https://www.minitab.com/en-us/support/videos/?vid=mtb16tour>

Assignments

Assignments consist of Topic Certifications and Extended Problems.

- **Topic Certifications (43)** - The Topic Certifications are to be completed within the Hawkes Learning Systems Courseware. The Topic Certifications are computer-graded and provide immediate feedback. Certification informs your instructor as to how you are doing in each chapter and provides feedback about areas that require more study on your part. The certification process (or displaying mastery of the lesson material) lets your instructor track your progress and will contribute to a portion of your final grade. (See Grading in the course guide.) You may attempt to certify as many times as you wish, but you must observe the following rules:
 - Do not move on to the next section until you are completely done (for example, do not try certifying on 2.2 until you are certified on 2.1).
 - Each certification allows so many incorrect responses before you are forced to start over. If you “strike out,” you should take some time to reread the corresponding section of the text and/or the Instruct option in the HLS Courseware.
- **Extended Problems (3)** - Submit Extended Problems for grading to Jason Reed at jreed@uidaho.edu and copy the ISI office. Graded Extended Problems will be returned via email by Mr. Jason Reed.

Extended Problems

- Must be word-processed and able to be opened in Microsoft Word.
- Graphics must be cut and pasted from Minitab.
- Must be written in proper English, in essay form, and between 2-4 pages.
- Extended Problems 1 and 3 are to be completed as stated in the Course Guide.
- Extended Problem 2 has two parts: Part A and Part B. Submit Part A and wait for further instruction. Once you receive further instruction, resubmit Part A with Part B.
- Show your work and justify your procedures and answers. This means show the formula you are using, show the formula again with the numbers in place of the symbols, and show the answer. (In the case of complex calculations, it is appropriate to show intermediate results.)
- Be sure to explain your work. You cannot expect the reader to do part of the work for you.
- It is important to remember that confidence is quite different from certain. If you construct a thousand 95% confidence intervals, you can expect to be confident, but wrong, about 50 times. If you insist on a higher level of confidence, you must increase the sample size and/or live with a bigger interval.
- Confidence intervals commonly show up in the news, and it is important that you be able to express them in proper English. See the end of Example 2, page 349 in your textbook. You should always write out your solution in this form.
- "We are (I am) 95% confident that the true population mean for the number of hours students on this campus study per week is between 13.5 and 17.9."

Study Hints:

- Keep a copy of every assignment submitted.
- Complete all assigned readings.
- Set a schedule allowing for course completion **one month** before your desired deadline.
- Web pages and URL links in the World Wide Web are subject to change. If you cannot access a link that has been listed in this course guide, use your favorite search engine (such as Google) to locate the site. To seek assistance or provide any updated information, contact your instructor.
- Independent Study in Idaho Math 1153 resources can be found on the ISI BbLearn site.

- Always complete the *Instruct* section on the HLS Courseware.
- Use the *Practice* section on the HLS Courseware as much as you wish.
- Complete the *Chapter Exercises* in the textbook. These are to prepare you to do the certifications and are **NOT** submitted for grading. Almost all of these problems have answers in the back of your textbook. Every textbook I have ever seen has some incorrect answers. If you think you've found one, please let your instructor know.
- *Certify* on the HLS Courseware. This counts towards your final course grade!
- Complete and submit the three Extended Problems to your instructor via an email attachment.
- As you end each chapter in *Beginning Statistics*, consult the *Chapter Review*.

Refer to the *Course Rules* in BbLearn for further details on your instructor's lesson guidelines and requirements. Also, refer to the *ISI Policies and Procedures* for essential ISI policies on submitting assignments to your instructor.

Course Introduction

Statistical Reasoning, Math 1153, is a survey course in statistics serving students from a variety of disciplines. Math 1108, Intermediate Algebra, is the prerequisite for this course, but the focus of the class is not on solving difficult algebraic problems; rather, the primary purpose of this class is to introduce the student to statistical thinking and to develop the skills needed to understand and incorporate data analysis techniques in everyday life.

Statistics, the science, is all about data. So even though this course is listed as Math 1153, it is really not a mathematics course. Because data vary, there is an inherent level of uncertainty in statistical problems that is not present in, say, geometry.

The real world is full of variability, and we are regularly forced to make judgments in the face of uncertainty. Statistical reasoning can help us make better judgments more often. We can't always be right, and statistics cannot literally *prove* anything, but statistics can provide guidance in a complex world.

No doubt you've heard analysts on TV dismiss statistics saying, "You can make statistics say anything you want." Well, of course you can—just as you can tell lies in English. That people sometimes fib doesn't mean you shouldn't learn to speak and listen, but that you should learn to identify fibbers. Similarly, that people can mislead with statistics doesn't mean you shouldn't use statistics, but that you need to learn how to identify statistical fibbers. I hope this course will help you to do this.

Course Objectives

Students will be introduced to descriptive and inferential statistics in this course. In a modern world that often suffers from both too much and too little data, students will participate in intelligently applying the concepts of this course to a variety of disciplines.

Students will:

1. interpret and produce descriptive statistics, both graphical and numerical;
2. study some of the foundational concepts of statistical inference, including the role of the normal distribution and other distributions;
3. solve numerous problems in inferential statistics from a wide collection of real-world and academic environments, with emphasis on testing hypotheses and estimating parameters;

4. determine the assumptions that underlie and explain past and present use and abuse of statistical reasoning;
5. practice using tables, calculators, and/or Courseware as time- and labor-saving devices, but only to the extent that these devices enhance understanding of the concepts and procedures of statistics.

Course Overview

In this course, we will cover most of the material in *Beginning Statistics*. The course consists of twelve lessons (arranged in three topics) and four exams. The graded assignments are **Certifications** (via HLS Courseware) and **Extended Problems** for each of the three Topics. (See *Grading* in this course guide.)

Topics	Lessons	Certifications (HLS)	Extended Problems	Exams
Topic 1: Data and Data Description	1–3	Topic 1: 10 certifications	Topic 1	Exam 1
Topic 2: Probability and Distributions	4–7	Topic 2: 15 certifications	Topic 2	Exam 2
Topic 3: Inference and Regression	8–12	Topic 3: 18 certifications	Topic 3	Exam 3
Topics 1–3	1–12:	Comprehensive		Final Exam

Exams

Each exam will be designed to take an hour, but to reduce time pressure, you will have up to 90 minutes on the exams. You will have two hours for the Final Exam. For each exam you may bring a calculator, the foldout of formulas and tables from your book, and one standard-sized page of notes (8.5" x 11" with writing on both sides). You should make a copy of your page of notes because you must submit your notes with your exam. The *Formulas and Tables* foldout from *Beginning Statistics* is essential for all exams. A printable version can be found in the BbLearn course under both Exams and Other Resources.

Calculations on the exams will not be difficult, but there must be enough work to justify all answers.

- For your instructor's exam guidelines, refer to the *Exam Information* sections in this course guide.
- Take the exam for each topic after you are fully certified in that topic and have the graded Extended Problem back from your instructor.
- You are advised to wait for your instructor's grades and comments on assignments and exams before taking each subsequent exam.

See the *Grading* section in this course guide for specific information on lesson and exam points and percentages.

All exams require a proctor unless an exam is self-administered.

To submit your *Proctor Information Form* online, visit the ISI website and select *Forms, Proctor Information Form*. Submit this form at least two weeks before your first exam. Refer to *Students, Assignments and Exams* on the ISI website for information on acceptable and unacceptable proctors.

Grading

The course grade will be based upon the following lessons and exams:

Certifications (10 points per group; 30 points total)

You can receive up to 10 points as a *cumulative* grade for the certifications within each of the three Topics. (See *Course Overview* in this course guide.) For example, if you certify 12 of the required 15 sections for Topic 2, then you will receive a score of 8.00 out of 10 for Certification 2. (Note: 8.00 is 12/15 of 10 points.) These are computer graded via the HLS Courseware.

Extended Problems (10 points each; 30 points total)

You must also turn in an Extended Problem after you complete Lessons 3, 7, and 12 (at the end of each Topic in this course guide). This problem is to be carefully written up in complete sentences. Mr. Reed grades these.

Exams (150 points)

After you have completed all Certifications and submitted your Extended Problem, you should take the corresponding Exam. Mr. Jason Reed grades the exams. His email is jreed@uidaho.edu.

(See the chart below.)

Certifications	Lessons	Points	Percentages
Topic 1	1–3	10	4.76%
Topic 2	4–7	10	4.76%
Topic 3	8–12	10	4.76%
Total		30	14.28%

Extended Problems	Lessons	Points	Percentages
Topic 1	1–3	10	4.76%
Topic 2	4–7	10	4.76%
Topic 3	8–12	10	4.76%
Total		30	14.28%

Exams	Lessons	Points	Percentages
Exam 1	1–3	30	14.29%
Exam 2	4–7	30	14.29%
Exam 3	8–12	30	14.29%
Final Exam	1–12	60	28.57%
Total		150	71.44%

Total Possible Points	210	100%
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Grade = Points Range

Your grade will be based on your point total using the following scale. Of course, if your point total falls on the cutoff between two intervals, you will receive the higher grade. For example, if you score 183 points, you will receive a grade of B+.

A = 195-210	B+ = 183-189	C+ = 162-168	D+ = 141-147	F = 0-126
A- = 189-195	B = 174-183	C = 153-162	D = 132-141	
	B- = 168-174	C- = 147-153	D- = 126-132	

The final course grade is issued after all assignments and exams have been graded.

Acts of academic dishonesty, including cheating or plagiarism, are considered a very serious transgression and may result in a grade of F for the course.

About the Course Developers

My name is Jason Reed, and I am a lecturer of mathematics at Idaho State University. I have been teaching math since 2003. I teach a variety of courses, including algebra, trigonometry, calculus, math for elementary teachers, and statistics.

Alan Egger is a Professor of Mathematics at Idaho State University. He has roughly thirty years of classroom experience and has taught courses at all levels. His research interests overlap mathematics and statistics. For the past ten years, Alan's spent more time in administration than in teaching but can assure you, teaching is more fun.

Amy Mills is a Mathematics instructor at Idaho State University. She's taught most of the intro-level math classes, and most semesters she's had at least one section of Intro Statistics. When not teaching, Amy spends time gardening, hiking, and practicing Taiji.

Contacting Your Instructor

Instructor contact information is posted on your BbLearn site under *Course Rules*.

STUDENT - Quick Start Guide

YOUR INFORMATION

Product: Beginning Statistics 3rd Edition,


Instructor Name: Reed

Section Name: Section 1


GETTING STARTED

1. Go to learn.hawkeslearning.com.
2. Select **Create an Account**.
3. Choose one of the following:

Please choose an option: ✕



I have an Access Code or License Number



I want to Purchase Access

Continue
or
Request Temporary Access

4. Enter your information into the form provided.
5. Set your password, time zone, and security questions.
6. Add your profile photo.

Congratulations!

You've just created your Hawkes Learning Account. Remember to log in with the same email and password to access any of the Hawkes Learning courseware. If you forget your password, select **I forgot my password!** We'll ask you the security question you set up or help you reset the password.

ENROLL IN YOUR COURSE

Select your **INSTRUCTOR** and **SECTION** from the drop-down menus, and select **ENROLL**.

You are now ready to complete assignments for this course.

NAVIGATE YOUR COURSE

Watch the Video Tour located under the profile menu to learn more.

Dashboard provides course information and your To-Do List.

To-Do List shows when homework and tests are due.

Navigation Toolbar contains links to important tools such as your grades, eBooks, the notifications center, and messages.

COMPLETE YOUR HOMEWORK

Each lesson involves three phases: Learn, Practice, and Certify. Use Learn and Practice to learn the concepts and work out practice problems. When you feel confident in the material, move to Certify to complete your homework.

For additional help, go to <http://www.hawkestv.com> to watch videos on every lesson.

WE CAN HELP

If you have any questions about registering your email address and password, enrolling in your course, or using the site, contact Hawkes Technical Support.

Phone

800.426.9538

Monday–Friday, 8:00 a.m.–10:00 p.m. ET

Online Chat

www.hawkeslearning.com

24 hours a day, 7 days a week

HAWKES LEARNING

1-800-426-9538

Assignment Submission Log

Send the completed *Proctor Information Form* to the ISI office at least two weeks before taking your first exam.

1. Readings

Warren, Carolyn, Kim Denley, and Emily Atchley. *Beginning Statistics*. 3rd ed. Mount Pleasant: Hawkes Learning/Quant Systems, Inc., 2021.

2. Self-Study Exercises: Do not submit these.

a. Chapter Exercises:

Exercises in *Beginning Statistics*. An answer key for odd exercises can be found in the back of the text. These exercises will prepare you to do the Certifications. (For a list of exercises from the text, see the *Chapter Exercises* for Lessons 1–12 in this course guide.)

b. Minitab Technology Practice

Directions on how to use Minitab (and other technology options) can be found by going to stat.hawkeslearning.com and navigating to Technology Instructions.

3. Graded Assignments: Submit these for grading.

a. Certifications

Certifications are submitted automatically online via courseware on the publisher’s website.

b. Extended Problems

Three Extended Problems after Lessons 3, 7, and 12 in this course guide. Submit Extended Problems directly to your instructor via an email attachment; graded Extended Problems will be returned by email.

Topic 1: Data and Data Description (Lessons 1-3)			
Lesson	Readings	Self-Study Exercises	Graded Assignments
1	Chapter 1, <i>Beginning Statistics</i> , pages 2-40	<ul style="list-style-type: none"> Chapter 1 exercises: Sections 1.1 through 1.4, and pages 41-42 in <i>Beginning Statistics</i> 	HLS Courseware, Chapter 1: Topic 1 Certifications 1.1, 1.2, 1.3, 1.4 (Submit via HLS.) Date Completed: _____
2	Chapter 2, pages 46-106	<ul style="list-style-type: none"> Chapter 2 exercises: Sections 2.1, 2.2, 2.3, and pages 107-112 in <i>Beginning Statistics</i> 	HLS Courseware, Chapter 2: Topic 1 Certifications 2.1, 2.2, 2.3 (Submit via HLS.) Date Completed: _____
3	Chapter 3, pages 114-167	<ul style="list-style-type: none"> Chapter 3 exercises: Sections 3.1, 3.2, 3.3, and page 168-169 in <i>Beginning Statistics</i> 	HLS Courseware, Chapter 3: Topic 1 Certifications 3.1, 3.2, 3.3 (Submit via HLS.) Date Completed: _____
Extended Problem 1	Located after Lesson 3 in this course guide: Topic 1 Extended Problem: Data and Data Description - Hot and Cold Rubber Bands Two-page report (Submit via email attachment) Date Submitted: _____		
It is time to make arrangements with your proctor to take Exam 1.			
Topic 2: Probability and Distributions (Lessons 4-7)			

Lesson	Readings	Self-Study Exercises	Graded Assignments
4	Chapter 4, <i>Beginning Statistics</i> , pages 172-228	<ul style="list-style-type: none"> Chapter 4 exercises: Sections 4.1, 4.2, 4.3, 4.4, 4.5, and pages 229-231 in <i>Beginning Statistics</i> 	HLS Courseware, Chapter 4: Topic 2 Certifications 4.1 through 4.5 (Submit via HLS.) Date Completed: _____
5	Chapter 5, pages 234-257	<ul style="list-style-type: none"> Chapter 5 exercises: Sections 5.1, 5.2 in <i>Beginning Statistics</i> 	HLS Courseware, Chapter 5: Topic 2 Certifications 5.1, 5.2 (Submit via HLS.) Date Completed: _____
6	Chapter 6, pages 284-345	<ul style="list-style-type: none"> Chapter 6 exercises: Sections 6.1, 6.2, 6.3, 6.4, 6.5, and pages 346-348 in <i>Beginning Statistics</i> 	HLS Courseware, Chapter 6: Topic 2 Certifications 6.1 through 6.5 (Submit via HLS.) Date Completed: _____
7	Chapter 7, pages 352-384	<ul style="list-style-type: none"> Chapter 7 exercises: sections 7.1, 7.2, 7.3, and pages 385-386 in <i>Beginning Statistics</i> 	HLS Courseware, Chapter 7: Topic 2 certifications 7.1 through 7.3 (Submit via HLS.) Date Completed: _____
Extended Problem 2	Located after Lesson 7 in this course guide: Topic 2 Extended Problem: Probability and Distributions - The Penny Thing Two-page report (Submit via email attachment) Date Submitted: _____		
It is time to make arrangements with your proctor to take Exam 2.			

Topic 3: Inference and Regression (Lessons 8-12)			
Lesson	Readings	Self-Study Exercises	Graded Assignments
8	Chapter 8, <i>Beginning Statistics</i> , pages 390-436, 449-451	<ul style="list-style-type: none"> Chapter 8 exercises: Sections 8.1, 8.2, 8.3, 8.4 in <i>Beginning Statistics</i> 	HLS Courseware, Chapter 8: Topic 3 Certifications 8.1 through 8.4 (Submit via HLS.) Date Completed: _____
9	Chapter 9, pages 458-502, 514-517	<ul style="list-style-type: none"> Chapter 9 exercises: Sections 9.1, 9.2, 9.3, 9.4 in <i>Beginning Statistics</i> 	HLS Courseware, Chapter 9: Topic 3 Certifications 9.1 through 9.4 (Submit via HLS.) Date Completed: _____
10	Chapter 10, pages 526-577, 618-621	<ul style="list-style-type: none"> Chapter 10 exercises: Sections 10.1, 10.2, 10.3, 10.4 in <i>Beginning Statistics</i> 	HLS Courseware, Chapter 10: Topic 3 Certifications 10.1 through 10.4 (Submit via HLS.) Date Completed: _____
11	Chapter 11, pages 632-685	<ul style="list-style-type: none"> Chapter 11 exercises: Sections 11.1, 11.2, 11.3, 11.4 in <i>Beginning Statistics</i> 	HLS Courseware, Chapter 11: Topic 3 Certifications 11.1 through 11.4 (Submit via HLS.) Date Completed: _____
12	Chapter 12, pages 728-762, 784-786	<ul style="list-style-type: none"> Chapter 12 exercises: Sections 12.1 and 12.2 in <i>Beginning Statistics</i> 	HLS Courseware, Chapter 12: Topic 3 Certifications 12.1 and 12.2 (Submit via HLS.) Date Completed: _____
Extended Problem 3	Located after Lesson 12 in this course guide: Topic 3 Extended Problem: Inference and Regression - Revenge of the Rubber Bands Two-page report (Submit via email attachment) Date Submitted: _____		
It is time to make arrangements with your proctor to take Exam 3.			
It is time to make arrangements with your proctor to take your Final Exam.			

TOPIC 1: Data and Data Description

Lesson 1

Statistics and Data

Lesson Objectives

After successfully completing this lesson, you will be able to:

- Understand and apply the basic vocabulary of statistics.
- Understand the basic processes and types of statistical studies.
- Understand and describe basic sampling techniques.
- Appreciate common practical and ethical concerns that arise in a study.

Reading Assignment

Beginning Statistics, Chapter 1, "Introduction to Statistics," pages 2-40.

Important Terms

Important terms for this lesson are found on pages 38-40 of your Beginning Statistics textbook.

Introductory Lecture

Statistics (as a discipline) is all about data. A *statistic* is a numerical description of a sample. Chapter 1 of *Beginning Statistics* provides you with the foundation you need to intelligently collect and discuss data. We cannot meaningfully discuss data without a common vocabulary and a few essential principles. Time invested in mastering these important terms will be essential to the course. Be sure to study the *Chapter Review* in *Beginning Statistics* on pages 38-40.

Assignment Overview

Before beginning the first written assignment, refer to the Course Rules in BbLearn for your instructor's assignment requirements. If emailing assignments to your instructor, please copy the ISI office at indepst@uidaho.edu.

Before starting the self-study exercises and graded assignments for Lesson 1, please read the introductory section of this course guide, pages 1-12, for important course information.

- The Course Rules in BbLearn for your instructor's requirements.
- You are responsible for understanding and following ISI policies and procedures. If there is anything on these pages you do not understand, contact the ISI office for clarification.

NOTE: For questions about the coursework, contact your instructor directly. Contact information is available in the *Course Rules* in BbLearn.

Chapter Exercises (Self-Study)

These chapter exercises will prepare you to do the graded HLS Certifications.

Instructions:

Complete the following problems in *Beginning Statistics*. Most of the problems have answers in the back of your textbook. **Do not submit these exercises.**

Hint:

Do the exercises for one section below, then complete the corresponding HLS Certification. For example, do *Section 1.1 Getting Started* in *Beginning Statistics*, then certify Section 1.1 in your HLS Courseware. See *Certification Assignment: Topic 1* below.

Section 1.1, pages 8-11:	1, 3, 9, 11, 13, 15, 17, 19, 21, 23, 25
Section 1.2, pages 17-18:	1, 3, 5, 9, 15, 17, 23
Section 1.3, pages 30-32:	1, 3, 5, 8-16, 17, 19, 21, 23, 25, 27, 29, 31, 33, 35, 39, 41
Section 1.4, pages 36-37:	1-6, 11, 13
Chapter 1 Exercises, pages 41-42:	3, 7, 15

Certification Assignment: Topic 1

Read the instructions in BbLearn on how to access and use your HLS Certification Courseware.

Instructions:

Complete the HLS Certifications for Chapter 1. The answers will be automatically graded, and your certification will be submitted automatically to the HLS gradebook. (You will submit an Extended Problem for Topic 1 after you complete Lesson 3.)

Certify 1.1, 1.2, 1.3, and 1.4.

Minitab Technology Practice (Self-Study)

Read the information provided in BbLearn for information on accessing and using Minitab. Also, refer to the *Technology* section in this course guide. Directions on how to use Minitab (and other technology options) can be found by going to stat.hawkeslearning.com and navigating to Technology Instructions.