



Independent Study | in **Idaho**

Math 253 Introduction to Statistics

Independent Study in Idaho
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The University of Idaho in statewide cooperation with
Boise State University — Idaho State University
Lewis-Clark State College

Course Guide

Independent
Study | in Idaho

PO Box 443225
Moscow ID 83844-3225

Self-paced study. Anytime. Anywhere!

Math 253 **Introduction to Statistics**

Idaho State University
3 Semester-Hour Credits

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2-Math 253

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Table of Contents

Welcome!.....	1
Course Description.....	1
Prerequisite	1
Course Materials	1
Additional Course Requirements	2
Course Delivery	2
Technology (MINITAB and <i>Hawkes Learning Systems</i> Software).....	2
Course Introduction	4
Course Objectives	4
Course Overview	4
Lessons.....	5
Exams.....	6
Grading	7
About the Course Developers	8
Contacting Your Instructor	8
Disability Support Services.....	8
Assignment Submission Log	9
Topic 1: Data and Data Description	
Lesson 1: Statistics and Data.....	13
Lesson 2: Graphical Descriptions of Data.....	15
Lesson 3: Numerical Descriptions of Data.....	17
Topic 1: Extended Problem: Data and Data Description.....	19
Exam 1 Information: Covers Lessons 1–3	21
Topic 2: Probability and Distributions	
Lesson 4: Probability, Randomness, and Uncertainty	22
Lesson 5: Probability Distributions	24
Lesson 6: Continuous Random Variables	25
Lesson 7: Samples and Sampling Distributions	27
Topic 2: Extended Problem: Probability and Distributions	29
Exam 2 Information: Covers Lessons 4–7	31
Topic 3: Inference and Regression	
Lesson 8: Confidence Intervals	32
Lesson 9: Confidence Intervals for Two Samples.....	34
Lesson 10: Hypothesis Testing.....	36
Lesson 11: Hypothesis Testing (Two or More Populations).....	38
Lesson 12: Regression.....	40
Topic 3: Extended Problem: Inference and Regression	41
Exam 3 Information: Covers Lessons 8–12	43
Final Exam Information: Covers Lessons 1–12	44
Appendix: Independent Study in Idaho Policies and Procedures	i
See the Appendix for information on registration, lessons/exams, instructor contact, etc.	
Forms for Independent Study in Idaho	

Independent Study in Idaho

This course is offered through Idaho State University.

Math 253: Introduction to Statistics

3 Semester-Hour Credits: ISU

Welcome!

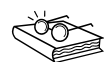
Whether you are a new or returning student, welcome to the Independent Study in Idaho (ISI) program. Before beginning this course, read the information provided below, including course description, prerequisites, required materials, course objectives, and information about lessons, exams, and grading.

Important!

As you read this section, you will see the following icon:



Use this icon to direct yourself to the **Appendix** in the back of this course guide for essential registration information, Independent Study in Idaho policies and procedures, and forms you will need to successfully complete this course. You are responsible for understanding and following ISI policies and procedures. This icon will also direct you to the **Registration Confirmation Letter**, which you will receive upon registration in this course. The *Registration Confirmation Letter* provides your course instructor's contact information and any specific lesson guidelines, and instructions about online access.



Turn to the **Appendix** now. Familiarize yourself with the information in the *Registration* section, student responsibilities in *Academic Integrity*, and the necessary forms. If there is anything you do not understand, please contact the ISI office for clarification before starting your course.

Course Description

Descriptive statistics, probability, confidence intervals, and hypothesis testing for one and two parameters. Emphasis on applications to a wide variety of disciplines.

Prerequisite

Math 108 (Intermediate Algebra)

Course Materials

Required Course Materials

- Warren, Carolyn, Kim Denley, and Emily Atchley. *Beginning Statistics*. 2nd ed. Charleston: Hawkes Learning Systems/Quant Systems, Inc., 2008.
 - CD: *Hawkes Learning Systems (HLS)* textbook software (comes with textbook; a 15-digit license number to access the software is packaged with the CD)
ISBN-10: 1-932628-12-6 ISBN-13: 978-1-932-62812-8
- MINITAB 15 Statistical Software
 - A license can be rented for a semester or more or purchased at:
 - www.minitab.com/education/click on *Student Rental Options*
 - www.minitab.com/education/semesterrental
 - You can also download a 30-day MINITAB FREE TRIAL at www.minitab.com/Downloads/.
 - Tutorials/Introduction: www.MINITAB.com/support/docs/rel15/MeetMINITAB.pdf
 - **MINITAB Manuals: On the ISI Blackboard Web site (see *Technology, MINITAB 15 Statistical Software* in this course guide)**

Independent Study in Idaho course materials are available for purchase at the University of Idaho Bookstore. To order online, visit the UI Bookstore's Web site, www.uidahobookstore.com, select *Textbooks, Independent Study* for a list of course materials. You also may order by telephone at (208) 885-7334.

Independent Study in Idaho courses are updated and revised periodically. Ordering course materials from the UI Bookstore at the time of registration allows you to purchase the correct edition(s) of textbook(s), course guides, and supplemental materials. If purchasing textbooks from another source, refer to the ISBN(s) for the textbook(s) listed for this course to ensure that you obtain the correct edition(s).

If you have questions regarding the course materials you have ordered and received, contact the UI Bookstore.

Additional Course Requirements

Internet access is required to successfully complete this course.

This course requires:

- a computer with Internet access (including e-mail);
- access to a Windows-based computer (Windows XP or Vista, current Internet Explorer or Mozilla Firefox, 1024 X 768 display, 512 K of memory, and Microsoft Office) with a CD/DVD drive;
- a calculator that is able to take square roots (for use on exams). Since you will be using MINITAB on most computational homework problems, having a TI 84 plus calculator (which the text uses) is not essential.

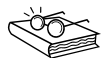
Course Delivery

This course is offered online through Blackboard.

The Blackboard site has live links to:

- *ISI Math 253 Course Guide* (in a printable format)
- MINITAB 15 *Statistical Software* resources
- Topic Extended Problem resources
- *Hawkes Learning Systems Software* Web site and instructions

The *ISI Math 253 Course Guide* is also available in print, and can be purchased from the University of Idaho Bookstore. (See *Course Materials*.)



To access the online Blackboard version of this course, see your ***Registration Confirmation Letter***.

Technology

Your course developer took the equivalent of Math 253 in about 4 BC (**B**efore **C**alculators were everywhere), or maybe it was 30 BC (**B**efore **C**omputers were everywhere), however you want to look at it. In those primitive times all of our calculations had to be done by hand or by tables. We spent so much time doing arithmetic that it was easy to miss the point of the course. Technology lets us avoid most of this issue.

We will be using the following software (for full listings see *Course Materials*):

1. MINITAB software package
2. *Hawkes Learning Systems Beginning Statistics* software (*HLS*)

MINITAB 15 STATISTICAL SOFTWARE

You need to rent or purchase a copy of MINITAB 15. Your MINITAB software comes with tutorials and also provides an introduction to MINITAB (see *Required Course Materials*).

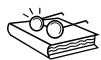
MINITAB will do calculations and draw charts and graphs, freeing you to master the course content. MINITAB output can be pasted into documents. This should be very valuable for you in preparing reports and papers for other classes. Much of the homework can be done either by hand or with MINITAB.

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 (*Appendix C: Getting Started with Minitab*), but only really touches the surface.

The ISI Math 253 course Blackboard site offers MINITAB resources, including live links to the MINITAB Web sites listed in this course guide. Your course developer Amy Mills has prepared the *ISI MINITAB Manual*, in which she compiled a set of MINITAB examples based on problems from your text. This manual is designed to help you with the Topic extended problems in this course guide. You will also find ISU's "WILDEST" MINITAB manual. The "WILDEST" manual was written to help teach statistics in high schools. "WILDEST" is based on a different text, but the examples given should be useful.

Of course you can also consult MINITAB's help, and search the Web for more examples.



To access the MINITAB resources for Math 253 see the Blackboard version of this course. (See *Course Delivery*.)

HAWKES LEARNING SYSTEMS BEGINNING STATISTICS (HLS) SOFTWARE

You should have purchased *Hawkes Learning Systems Beginning Statistics* software (*HLS* for short) with the textbook, *Beginning Statistics* (see *Required Course Materials*). *HLS* parallels *Beginning Statistics*, section by section. *HLS* provides you with a means to practice and then **certify** (or, show) your mastery of the material. (See *Lessons, Certification Assignments*.)

Please note that once you open the package, the materials are **NOT** refundable.

Installing Hawkes Learning Systems (HLS) Software

Before you begin this course you must install *HLS* on your computer. The *HLS* software provides computer-based instruction, tutoring, practicing, and **certification**. It matches the textbook and will be key to your success in the course.

If you have any problems with or questions about *Hawkes* software, visit any of the following for help:

- *Hawkes* Web site: **www.hawkeslearning.com**
- techsupport@hawkeslearning.com
- 843-571-2825
- *Student Users Manual / Student Quick Start Guide*:
http://www.hawkeslearning.com/PC_manuals.htm



For detailed instructions on how to install and access your *Hawkes Learning Systems (HLS)* software, see your **Registration Confirmation Letter** and the ISI course Blackboard site. (See *Course Delivery*.)

Course Introduction

Introduction to Statistics, Math 253, is a survey course in statistics serving students from a variety of disciplines. Math 108 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 253*, 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 rather, that you should learn to identify fibbers. Similarly, that people can mislead with statistics doesn't mean you shouldn't use statistics, but rather, 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 software 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* software) and extended **Topic problems** for each of the three Topics. (See *Grading*).

Topics	Lessons	Certifications (<i>HLS</i>)	Topic 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: 19 certifications	Topic 3	Exam 3
Topics 1–3	1–12: Comprehensive			Final Exam

Lessons

Each lesson includes the following components:

- Lesson objectives
- Reading assignment
- Important terms
- Lecture
- Chapter exercises (*self-study*)
- Certification assignment (via *Hawkes* software)
- MINITAB technology section (Most lessons include this.)
- Topic problem (three problems, located after lessons 3, 7, and 12 in this course guide)

Certification Assignments (*HLS* Software)

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 a portion of your final grade. (See *Grading*.) You may attempt to certify as many times as you wish. Observe the following rules though:

- Do not move on to the next section until you are completely done (for example, don't 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" please wait at least an hour before you try again.
- Submit your certifications to your instructor. The software shows you two ways to submit a certification.

To Certify (Do Your Assignment in the *Hawkes* Software)

1. The **Certify** option is where you will complete your assignment.
2. After certifying, you will be given a certification code (this verifies that you completed your assignment). It is recommended that you print and/or save your certification code.
3. Submit the certification via *Hawkes* software.
4. With Internet access, you should receive a message that says your certificate has been submitted in your instructor's gradebook. You are now done with that assignment!

Topic Problems

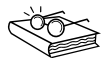
The extended Topic problems (in this course guide) touch many of the sections in each topic and should help unify the material. You will submit the Topic problems (via e-mail attachments) in written form, using complete sentences and addressing all of the questions posed in the problem. Think of these as mini-reports. Each Topic problem submission should be about two typed pages and may include some graphical displays.



You can access a sample Topic problem and a sample Topic problem write up on the Blackboard version of this course.

Study Hints

- Complete all assigned readings.
- Set a schedule allowing for completion of the course one month prior to your desired deadline. (An *Assignment Submission Log* is provided for this purpose.)
- 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 253 resources can be found on the ISI Blackboard Web site.
- Complete the INSTRUCT section on the *HLS* software.
- Use the PRACTICE section on the software 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 solutions in the back of your textbook (*Appendix D*). Every textbook I have ever seen has some incorrect solutions. If you think you've found one, please let your instructor know.
- CERTIFY on the *Hawkes* software and submit the certifications to your instructor via *Hawkes*.
- Complete and submit the three Topic problems to your instructor via e-mail attachment.
- As you end each chapter in *Beginning Statistics*, ALWAYS consult the *Chapter Review*.



See your **Registration Confirmation Letter** for further details on **certification** and **your instructor's requirements: how to format and submit lessons, number of lessons you may submit at one time, and lesson guidelines**. Also see the **Appendix** at the back of this course guide for essential **ISI policies on submitting lessons to your instructor**.

Exams

Each Topic exam will be designed to take an hour, but to reduce time pressure, you will have up to 90 minutes on the Topic exams. You will have two hours for the Final Exam. For each exam you may bring a calculator, the foldout of tables from your book, and one standard sized page of notes (8 .5" x 11" and, yes, you may write on both sides). You should make a copy of your page of notes because you must submit your notes with your exam (so your instructor can advise you on your notes for next time). The foldout, *Formulas and Tables*, is essential for all exams.

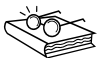
Calculations on the exams will not be difficult, but there must be enough work to justify all answers.

- For your instructor's exam guidelines, refer to your *Registration Confirmation Letter* and the *Exam Information* sections in this course guide.
- Take the exam for each Topic after you are fully certified and have the graded Topic problem back from your instructor.
- Wait for your instructor's grades and comments on lessons prior to taking each subsequent exam.

See *Grading* for specific information on lesson/exam points and percentages.

Choosing a Proctor/Scheduling Exams

All exams require a proctor. (Choose a proctor and send the completed **Proctor Information Form** to the ISI office at least **two weeks prior to taking your first exam**.)



See the **Appendix** for guidelines on **how to choose a proctor and schedule exams**.

Grading

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

Topic 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*.)

Topic Problems (10 points each; 30 points total)

You must also turn in a Topic 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.

Exams (150 points)

After you have completed all Topic certifications and submitted your Topic problem (and reviewed your instructor's comments on your problem) you should take the Topic exam. (See the chart below.)

Topic Certifications	Lessons	Points	Percentages
Topic 1	1–3	10	4.8%
Topic 2	4–7	10	4.8%
Topic 3	8–12	10	4.8%
Total		30	14.4%

Topic Problems	Lessons	Points	Percentages
Topic 1	1–3	10	4.8%
Topic 2	4–7	10	4.8%
Topic 3	8–12	10	4.8%
Total		30	14.4%

Exams	Lessons	Points	Percentages
Exam 1	1–3	30	14.3%
Exam 2	4–7	30	14.3%
Exam 3	8–12	30	14.3%
Final Exam	1–12	60	28.3%
Total		150	71.2%

Total Possible Points	210	100%
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Your grade will be based on your point total using the following scale:

Grade = Points Range	Percentages
A = 189–210	90%
B = 168–188	80%
C = 147–167	70%
D = 136–146	65%
F = 135 and below	64% and below

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



See the **Appendix** for information about *confidentiality of student grades, course completion and time considerations*, and *requesting a transcript*.

About the Course Developers

My name is Alan Egger and I am a Professor of Mathematics at Idaho State University. I have roughly thirty years of classroom experience and have taught courses at all levels. My research interests overlap mathematics and statistics.

For the past ten years, I've spent more time in administration than in teaching. I can assure you, teaching is more fun.

My name is Amy Mills and I am a mathematics instructor at Idaho State University. I've taught most of the intro-level math classes, and most semesters I've had at least one section of Intro Statistics. When not teaching, I spend time gardening, hiking, and practicing Taiji.

Contacting Your Instructor



You will receive *course and instructor contact information* in your *Registration Confirmation Letter*, which you will receive upon registration in this course.

Disability Support Services



See the **Appendix** for *information on Disability Support Services (DSS)*.

Assignment Submission Log

1. Readings

Warren, Carolyn, Kim Denley, and Emily Atchley. *Beginning Statistics*. 2nd ed. Charleston: Hawkes Learning Systems/Quant Systems, Inc., 2008.

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

a. Chapter Exercises:

Exercises in *Beginning Statistics*; answer key in *Beginning Statistics*, Appendix D, page 791. These exercises will prepare you to do the Topic certifications. (For list of exercises, see lessons 1–12, *Chapter Exercises*, in this course guide.)

b. MINITAB Technology Practice

MINITAB 15 Statistical Software (for rental/purchase, see *Required Course Materials*); exercises in *Beginning Statistics*.

3. Graded Assignments: Submit these for grading.

a. Topic Certifications

CD, *Hawkes Learning Systems (HLS) Software*. Submit certifications via *Hawkes*; automatically graded by the program.

b. Topic Problems

Three extended problems after lessons 3, 7, and 12 in this course guide. Submit assignments directly to your instructor via e-mail attachment; graded assignments will be returned by e-mail.

TOPIC 1: DATA AND DATA DESCRIPTION (LESSONS 1–3)			
Lesson	Readings	Self-Study Exercises	Graded Assignments
1	Chapter 1, <i>Beginning Statistics</i> , pages 3–35	<ul style="list-style-type: none"> • Chapter 1 exercises: sections 1.1 through 1.4, and pages 36–37 in <i>Beginning Statistics</i> • MINITAB technology practice, page 41 in <i>Beginning Statistics</i>; use MINITAB 15 Statistical Software 	<p><i>Hawkes</i> software, Chapter 1: Topic 1 certifications 1.1 through 1.4 (Submit via Hawkes.)</p> <p>Date Submitted: _____</p>
2	Chapter 2, pages 43–87	<ul style="list-style-type: none"> • Chapter 2 exercises: sections 2.1, 2.2, 2.3, and pages 90–91 in <i>Beginning Statistics</i> • MINITAB, pages 100–101; use MINITAB 15 Statistical Software 	<p><i>Hawkes</i> software, Chapter 2: Topic 1 certifications 2.1, 2.2, 2.3 (Submit via Hawkes.)</p> <p>Date Submitted: _____</p>
3	Chapter 3, pages 103–142	<ul style="list-style-type: none"> • Chapter 3 exercises: sections 3.1, 3.2, 3.3, and page 142 in <i>Beginning Statistics</i> • MINITAB, page 149; use MINITAB 15 Statistical Software 	<p><i>Hawkes</i> software, Chapter 3: Topic 1 certifications 3.1, 3.2, 3.3 (Submit via Hawkes.)</p> <p>Date Submitted: _____</p>

Lesson	Readings	<i>Self-Study Exercises</i>	Graded Assignments
Topic Problem 1	None	None	After Lesson 3 in this course guide: Topic 1 extended problem: Data and Data Description Two-page report (Submit via e-mail attachment) Date Submitted: _____
<p>Choose a proctor and send the completed <i>Proctor Information Form</i> to the ISI office at least two weeks prior to taking your first exam.</p> <p>It is time to make arrangements with your proctor to take Exam 1.</p>			
TOPIC 2: PROBABILITY AND DISTRIBUTIONS (LESSONS 4–7)			
4	Chapter 4, pages 151–192	<ul style="list-style-type: none"> Chapter 4 exercises: sections 4.1, 4.2, 4.3, 4.4, and pages 193–195 in <i>Beginning Statistics</i> 	<i>Hawkes</i> software, Chapter 4: Topic 2 certifications 4.1 through 4.4 (Submit via <i>Hawkes</i>.) Date Submitted: _____
5	Chapter 5, pages 201–220	<ul style="list-style-type: none"> Chapter 5 exercises: sections 5.1, 5.2 in <i>Beginning Statistics</i> MINITAB, page 245; use MINITAB 15 Statistical Software 	<i>Hawkes</i> software, Chapter 5: Topic 2 certifications 5.1, 5.2 (Submit via <i>Hawkes</i>.) Date Submitted: _____
6	Chapter 6, pages 247–288	<ul style="list-style-type: none"> Chapter 6 exercises: sections 6.1, 6.2, 6.3, 6.4, 6.5, and page 289 in <i>Beginning Statistics</i> MINITAB, page 297; use MINITAB 15 Statistical Software 	<i>Hawkes</i> software, Chapter 6: Topic 2 certifications 6.1 through 6.5 (Submit via <i>Hawkes</i>.) Date Submitted: _____
7	Chapter 7, pages 299–334	<ul style="list-style-type: none"> Chapter 7 exercises: sections 7.1, 7.2, 7.3, 7.4, and page 335 in <i>Beginning Statistics</i> MINITAB, page 343; use MINITAB 15 Statistical Software 	<i>Hawkes</i> software, Chapter 7: Topic 2 certifications 7.1 through 7.4 (Submit via <i>Hawkes</i>.) Date Submitted: _____

Lesson	Readings	<i>Self-Study Exercises</i>	Graded Assignments
Topic Problem 2	None	None	After Lesson 7 in this course guide: Topic 2 extended problem: Probability and Distributions Two-page report (Submit via e-mail attachment.) Date Submitted: _____
It is time to make arrangements with your proctor to take Exam 2.			
TOPIC 3: INFERENCE AND REGRESSION (LESSONS 8–12)			
8	Chapter 8, pages 345–372	<ul style="list-style-type: none"> Chapter 8 exercises: sections 8.1, 8.2, 8.3, 8.4 (skip 8.5), and pages 385–386 in <i>Beginning Statistics</i> MINITAB technology practice: page 394–395; use MINITAB 15 Statistical Software 	<i>Hawkes</i> Software, Chapter 8: Topic 3 certifications 8.1 through 8.4 (skip 8.5) (Submit via <i>Hawkes.</i>) Date Submitted: _____
9	Chapter 9, pages 397–445	<ul style="list-style-type: none"> Chapter 9 exercises: sections 9.1, 9.2, 9.3, 9.4 in <i>Beginning Statistics</i> MINITAB, pages 462–465; use MINITAB 15 Statistical Software 	<i>Hawkes</i> Software, Chapter 9: Topic 3 certifications 9.1 through 9.4 (Submit via <i>Hawkes.</i>) Date Submitted: _____
10	Chapter 10, pages 467–511	<ul style="list-style-type: none"> Chapter 10 exercises: sections 10.1, 10.2, 10.3, 10.4 10.5 (skip 10.6–10.8) in <i>Beginning Statistics</i> MINITAB, pages 569–571; use MINITAB 15 Statistical Software 	<i>Hawkes</i> Software, Chapter 10: Topic 3 certifications 10.1 through 10.5 (Submit via <i>Hawkes.</i>) Date Submitted: _____
11	Chapter 11, pages 573–608	<ul style="list-style-type: none"> Chapter 11 exercises: sections 11.1, 11.2, 11.3, 11.4 (skip 11.5, 11.6) in <i>Beginning Statistics</i> MINITAB, pages 656– 658; use MINITAB 15 Statistical Software. 	<i>Hawkes</i> Software, Chapter 11: Topic 3 certifications 11.1 through 11.4 (Submit via <i>Hawkes.</i>) Date Submitted: _____

Lesson	Readings	<i>Self-Study Exercises</i>	Graded Assignments
12	Chapter 12, pages 663–691	<ul style="list-style-type: none"> • Chapter 12 exercises: sections 12.1, 12.2 (skip 12.3, 12.4) in <i>Beginning Statistics</i> • MINITAB, page 727; use MINITAB 15 Statistical Software 	<i>Hawkes</i> Software, Chapter 12: Topic 3 certifications 12.1, 12.2 (Submit via <i>Hawkes</i>.) Date Submitted: _____
Topic Problem 3	None	None	After Lesson 12 in this course guide: Topic 3 extended problem: Inference and Regression Two-page report (Submit via e-mail 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:

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

Reading Assignment

Beginning Statistics, Chapter 1, pages 3–35

Important Terms

Important terms for this lesson are found on pages 34–35 of your *Beginning Statistics* textbook.

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. The technology example (page 41, MINITAB, Technology) is quite simple, but it will get you started on MINITAB. Follow the instructions on page 41 to produce random numbers in MINITAB. Be sure and study the *Chapter Review* in *Beginning Statistics* on pages 34–35.

Assignment Overview



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;
- your **Registration Confirmation Letter** for your instructor's requirements: **how to format and submit lessons, number of lessons you may submit at one time, and lesson guidelines**; and
- the **Appendix** in the back of this course guide for essential Independent Study in Idaho policies and procedures, and forms you will need to successfully complete this course.

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 your *Registration Confirmation Letter*.

Chapter Exercises (*Self-Study*)

These chapter exercises will prepare you to do the graded *Hawkes* certifications.

Instructions:

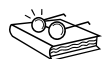
Complete the following problems in *Beginning Statistics*. Almost all of the problems have answers in *Beginning Statistics*, Appendix D. **Do not submit these exercises.**

Hint:

Do the exercises for one section below, then complete the corresponding certification (for example, do Section 1.1, Getting Started, in *Beginning Statistics*, then certify 1.1, Getting Started, on your *Hawkes* software CD. See *Certification Assignment: Topic 1* below).

Section 1.1, pages 9–11:	1, 3, 7, 9, 11, 17, 19, 23, 27, 29
Section 1.2, pages 17–18:	1, 3, 5, 15, 19
Section 1.3, pages 27–29:	1, 3, 5, 7–15, 17, 19, 21, 23, 25, 27, 31, 33, 35, 37
Section 1.4, pages 32–33:	1–10
Chapter 1 exercises, pages 36–37:	3, 7, 15

Certification Assignment: Topic 1



See your *Registration Confirmation Letter* for directions on how to access and use your *Hawkes* (*HLS*) certification software.

Instructions:

Complete the *Hawkes* (*HLS*) software certifications for Chapter 1. **Submit them for grading** via *HLS*; the answers will be automatically graded. (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*)



See your *Registration Confirmation Letter* for information on accessing and using MINITAB. Also, refer to the *Technology* section in this course guide.

Do not submit this exercise.

Beginning Statistics, page 41