

Online Syllabus

Math& 146 INTRODUCTION TO STATISTICS
5 Credits (Q, SR, MS)
FALL QUARTER 2015
Section OL1, 5660

INSTRUCTOR: Crystal J. R. Holtzheimer, M.Ed. PHONE: (360)383-3543

OFFICE : LDC 213C

OFFICE HOURS: 11:30-12:20 M-Th
in person or as arranged on Canvas

E-MAIL: choltzheimer@whatcom.ctc.edu

WEB: <http://mathtastic.wordpress.com>

TEXTBOOK: Understandable Statistics: Concepts and Methods by Brase and Brase,
11th Edition

TECHNICAL REQUIREMENTS:

It is expected that you have access to the necessary technology to be successful in this online course. Necessary technology will include:

- Graphing calculator with a statistical package (TI-83 or TI-84 required)
- Access to a computer (at home, school, or work) which you can use for extended periods of time
- Broadband internet access (cable, DSL, or other high-speed)
- A Canvas-compatible browser (Canvas works best with Firefox, but will also work with Safari, Chrome, and Internet Explorer)
- Up-to-date antivirus software is highly recommended, though not required
- If you wish to use the Conferencing feature through Canvas, a headset with a microphone is required
- Access to a printer and a mechanism for uploading printed documents (scanner, ability to photograph documents, etc...)

TECHNICAL SKILLS:

To be successful in an online class, you should have the ability to:

- Navigate web sites, including downloading and reading files from web sites
- Be comfortable attaching and downloading documents/files
- Save files in commonly used formats (.doc, .docx, .rtf, .pdf, etc...)
- Copy and paste text and other items
- Save and retrieve documents and files on your computer
- Locate information on the internet using search engines
- Use the rich content editor (this topic is covered in the Canvas Student Quickstart Guide – see the link below)
- Print documents

- Scan/upload documents, including converting documents to PDF format
- Use Conversations in Canvas (this topic is covered in the Canvas Student Quickstart Guide – see the link below)

VIRTUAL/ON-CAMPUS RESOURCES:

- WCC Library – HNR
- Calculators available for check-out in library (third day of classes)
- Course materials on reserve in the library
- Free tutoring in the WCC Math Center – CAS 113
- Online math center - <http://math.whatcom.ctc.edu/>
- E-tutoring – <http://www.eTutoring.org> (for instructions on accessing the site, please contact your instructor)
- Counseling and Advising – LDC 116
- Supplementary resources at <http://mathtastic.wordpress.com/math-146/>
- Canvas Student Quickstart Guide: <http://guides.instructure.com/m/8470>
- WCC Student Helpdesk – HNR 104, (360)383-3410, studenthelpdesk@whatcom.ctc.edu

TECHNICAL SUPPORT:

Technical support is available by clicking on the Help button at the top right of the screen inside of the Canvas platform. When you click on this button, you will have the option of contacting your instructor, searching the Canvas Guides, contacting the WCC Student Helpdesk to report a problem, consulting WCC eLearning resources, or seeking help from the Canvas community. You can also get help from the Student Helpdesk in person in HNR 104, by calling (360)383-3410, or by e-mailing studenthelpdesk@whatcom.ctc.edu. The Helpdesk is open from Monday to Thursday, 8:00 am to 9:00 pm.

COMMUNICATION:

To contact your instructor, you may schedule an appointment (online appointments can be made for convenience), send a message through Conversations in Canvas, or call or e-mail. E-mail and Canvas contact are my preferred methods of communication, but feel free to contact me using any of the above. I will respond to any messages (voicemail, e-mail, Canvas messages) within two business days. I do not regularly check my messages over the weekend, or on holidays.

COURSE DESCRIPTION:

Rigorous introduction to statistical methods and hypothesis testing. Includes descriptive and inferential statistics. Tabular and pictorial methods for describing data; central tendencies; mean; modes; medians; variance; standard deviation; quartiles; regression; normal distribution; confidence intervals; hypothesis testing, one and two-tailed tests. Applications to business, social sciences, and sciences. Graphing Calculator Required.

PREREQUISITE:

Math 88 or 99 with a grade of "C" or better, or equivalent.

LEARNING OUTCOMES:

Upon successful completion of this course, each student should be able to:

- Interpret values and draw conclusions from data using appropriate statistical terminology.
- Organize data using tabular and graphical methods.
- Summarize data using numerical measures of center and spread that are appropriate for the data set.
- Compute probabilities. These include theoretical, experimental, compound, conditional, binomial, and normal.
- Create confidence intervals for means, proportions, and differences between means and proportions.
- Conduct hypothesis tests for means, proportions, correlation coefficients, slopes of least squares lines, and differences between means and proportions.
- Compute the least squares regression line for bivariate linear data.

CORE LEARNING ABILITIES:

WCC's core learning abilities (CLAs) – quantitative literacy, information literacy, communication, critical thinking, and global awareness – are skills taught and reinforced throughout our curriculum. These skills are integral to students' professional and personal lives. This course will give you the opportunity to practice and develop quantitative literacy.

TOPICS:

- Descriptive and inferential statistics
- Tabular and pictorial methods for describing data
- Central tendencies, mean, modes
- Variance, standard deviation, quartiles
- Binomial Distribution
- Normal distribution
- Confidence Intervals
- One and two tailed hypothesis testing
- Linear Regression
- Applications

STUDENTS WITH DISABILITIES:

Any student with a disability requiring auxiliary aids, services, or other accommodations should contact the Access & Disability Services (ADS) office in the Entry and Advising Center in LDC 116 or call (360)383-3080 or (360)255-7182 (Videophone) to make an appointment. **Students with special learning needs should inform the instructor of special accommodations in writing by the end of the first week of classes.**

ATTENDANCE:

“Attendance,” as such, is not required for an online course. Course requirements will be met online in the Canvas platform. However, this is not a self-paced class. Online assignments, tests, and online quizzes have due dates. Therefore, it is recommended that you familiarize yourself with these dates (available in the Canvas platform), and that you log in to Canvas at least 2 to 3 times per week, to make sure you don’t miss any due dates or important announcements. Additionally, you can set up your notification preferences in Canvas so that you receive a text, e-mail, Facebook notification, or Twitter notification whenever important events occur in the course.

HOMEWORK:

Homework problems are assigned out of the book, and there will be a set of homework problems for each section we cover. However, homework problems will not be collected or included in your final grade. It is expected that you will keep up-to-date on the homework assignments, and that you will ask questions of your instructor, tutors, and/or other students in the class if you encounter difficulties with the homework problems. These are ungraded discussion boards in the Canvas course set up specifically for this purpose.

ASSESSMENTS:

There will be an assessment for each chapter that we cover in the class. Work shown, legibility, and correctness of the answer will weigh heavily in the grade. You are allowed the use of your calculator, calculator packet, symbol sheet, and a 3x5” notecard (both sides) when completing the assessments. All other items are prohibited, and the use of them will constitute cheating. You are also prohibited from working with other students or tutors on the assessments. The assessments can be viewed and submitted within the Canvas environment. **Please check the due dates carefully as late assessments will only be accepted in the case of a verifiable illness or emergency, and only if you have contacted the instructor ON or BEFORE the due date to notify them of a late submission.**

GRADED DISCUSSIONS:

There will be a graded discussion for each chapter we cover in the class. The discussion forums are located online in Canvas. Discussion questions have a due date for responses, so please make sure to familiarize yourself with these due dates, as **late responses will lose 2 points for each day that they are late.** You are allowed the use

of any reference materials at your disposal when responding to the discussion questions. To earn full points for participating in the discussion, you need to post a **substantive response** (more than just one or two sentences) to the initial discussion question, and also post a **substantive response** to at least one other person in the class. The goal is for these discussions to feel as much like an in-class discussion as possible in an online format. Active participation by all students is crucial in order for this to take place.

GRADING POLICY:

Final grades will be based on 10 assessments and 10 graded discussions. No extra credit assignments or problems will be given. I do not grade on a curve. Your final grade will be computed based on the following:

Assessments	225 points (see Canvas for point distribution)
Discussions	10 points each, 100 points total

GRADING SCALE:

Letter grades will be assigned using the following scale:

93-100% = A	80-82% = B-	67-69% = D+
90-92% = A-	77-79% = C+	60-66% = D
87-89% = B+	73-76% = C	00-59% = F
83-86% = B	70-72% = C-	N = Audit

If you have registered for S/U grading, a grade of S will be given for an average of 73% or better. Please see the calendar for the last day to register for S/U, N, or W grading.

INCOMPLETES:

An "incomplete" for this course is discouraged. However, for a number of verifiable personal emergencies we may discuss grading options as long as you have shown sufficient effort and satisfactory progress (all assignments up-to-date, 72% average on exams, good effort, and discussion with teacher). If circumstances in your life prevent your succeeding in this course at this time, you should withdraw before the official withdrawal date (check with the Registration Office) and try the course at another time.

WCC ELEARNING INCLEMENT WEATHER PROCEDURE:

In the event of inclement weather, all online courses, including the online portion of hybrid courses, will be conducted as scheduled. Closures or delays announced for the Whatcom Community College campus will not apply to online instruction.

A student whose normal access to the internet is interrupted by inclement weather (for example, because of a power outage) is expected to make an effort to meet course

deadlines by going to another location with internet access. However, individuals must make decisions to protect their own health and safety if conditions make it unsafe to travel. A student who cannot reach a location with internet access should contact their instructor as soon as possible.

NETIQUETTE:

“Netiquette” refers to guidelines to follow when communicating with others in an online environment. These guidelines help to enhance respect and clarity when sending and receiving messages online. These guidelines can be found at <http://online.uwc.edu/technology/etiquette>. Please read and review these before beginning to communicate with others in the Canvas environment.

ACADEMIC INTEGRITY:

Academic integrity is taken seriously at WCC. Any and all forms of cheating will result in disciplinary action and will be reported to the Vice President for Educational Services. For more information, please see the Academic Integrity guidelines in the WCC Student Handbook.

Tips for Reading Mathematics

Reading the textbook is important for succeeding academically. This holds true in your math class. However, reading mathematics is different from other types of reading. Getting the most out of a math textbook will require more than just skimming through the text. Below are some tips for helping you get the most from your mathematics text.

- **Focus on concepts, not exercises**
The most important material in a math textbook is the stuff *between* the problem sets and exercises. If in the past, you have opened your math book only when doing problem sets and exercises (looking at the rest of the book only for examples which mirror the current homework), you must rid yourself of this bad habit now. Instead, set aside a time to read the text when you are not working on a homework assignment. This will enable you to truly focus on the mathematical concepts at hand.

There are an infinite number of types of mathematics problems, so there is no way to learn every single problem-solving technique. Mathematics is about ideas. The math problems which you are assigned are expressions of these ideas. If you can learn the key concepts, you will be able to solve *any* type of problem (including ones you have never seen before) involving those concepts.
- **Read the text more than once**
You cannot read mathematics in the same way as you would read a newspaper or a novel. Many of the ideas presented in a typical college mathematics course have confounded brilliant minds in centuries past. So it is not unexpected that you may have difficulty learning these same ideas if you quickly scan through the reading assignments just once. You should expect to go through each reading

assignment several times before you can gain a full understanding of the material.

- **When reading through for the first time, scan for big ideas**
The first time you read through a chapter of the textbook, you should be thinking to yourself: “What is the main point of the chapter?” Look for the big picture. The details are important, but you need to be aware of the forest first before focusing on the trees.
- **The second time through, fill in details**
After you get the big picture, you should then look at the details. Take some time to think about each of the definitions, theorems, and formulas you encounter (more on this later).
- **Read with paper, pen, and calculator**
As you are reading through the text, you should be writing notes. Check calculations. Rewrite definitions and theorems *in your own words*. See if you can come up with your own examples.
- **Read the narrative**
There is a story to be told in mathematics. What is the progression of ideas being told? Don’t just skip to the formulas and examples.
- **Study the examples**
What points do each of the examples illustrate? Some examples are extreme cases. Other examples are supposed to illustrate “typical” situations.
- **Read the pictures**
There are good reasons for the many pictures and graphs in mathematics texts. You should be asking yourself what features of the picture are important to the key concepts. Focus on how each picture illustrates a particular idea.
- **Learn the vocabulary and the language**
Pay attention to definitions and what they mean. Mathematics language is very precise, and a word may have a different meaning when used in a mathematical context than in everyday use.
- **Learn the theorems and what they mean**
Theorems are vital bricks to building mathematical knowledge. When you see a theorem in a mathematics text, look at it very closely. What does it say? What do you know from a theorem?
- **Use the index and the appendices. Know what every word means**
Make sure that you understand all of the words and ideas. If there is a particular word which you do not know (or which you want to know better), look it up. Use the table of contents or the index to help you.
- **Make a note of things you don’t understand; ask for help afterwards**
Even after following all of the above advice, you might still find some of the ideas confusing. That’s OK. You are studying difficult stuff! If there is something that

you don't understand, mark it. Write down any questions you may have. You then can bring up these issues with your instructor or a classmate.

College Readiness Attributes

Statewide Community College Mathematics teachers have assembled a set of standards for success in math classes. Students should possess the following general attributes or characteristics in order to be successful in college-level courses:

1. Take responsibility for their own learning.
2. Attend class regularly and on-time.
3. Attempt all problems assigned for homework.
4. Utilize faculty office hours and college tutoring services.
5. Persevere when faced with time-consuming or complex tasks.
6. Combine a variety of techniques to solve problems.
7. Be willing to try a second path when the first path doesn't work out.
8. Notice and attend to details.
9. Notice and retain symbols in mathematical work.
10. Communicate **clearly** in written mathematical symbolism.
11. Show work.
12. Notice patterns.
13. Display intellectual curiosity.
14. Pose questions that reveal engagement with the material.
15. Investigate beyond questions posed.
16. Be willing to take risks and be challenged when solving problems and studying the material.
17. Contribute to and benefit from problem-solving activities.
18. Be respectful of others.
19. Be cooperative.
20. Work constructively with other students and the instructor.
21. Build on others' ideas.