



# MA 200 Elementary Statistics

Amber Meis  
NORTH CENTRAL KANSAS TECHNICAL COLLEGE

## COURSE INFORMATION

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This course covers topics related to distributions, measures of central tendency and dispersion, sampling methods, hypothesis testing, correlation, and regression. A good working knowledge of "intermediate" algebra is necessary for the successful student of introductory statistics. Students will apply these concepts to real world situations through applications, simulations and word problems.

Credits: 3

Total Hours: 45

Pre/Corequisites:

- Prerequisite: MA-111

## CLASS INFORMATION

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Section Number:

Term: Spring Year: 2021 Start Date: 1/11/2021 End Date: 5/14/2021

## INSTRUCTOR

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Amber Meis

Email: [ameis@ncktc.edu](mailto:ameis@ncktc.edu)

Office Phone: 7856236051

Office Location: Classroom A Office

Office Hours: by appointment only

To get in touch with me, email is by far the best communication device.

## TEXTBOOKS

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Understanding Basic Statistics by Brase & Brase, 8th Ed. ISBN 978-1-337-55807-5. You must also purchase access to Enhanced WebAssign. (Cengage book company has both access code with an ebook available at [www.cengage.com](http://www.cengage.com))

## SUPPLIES

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- Pencil and Paper
- Calculator (preferably scientific)
- Enhanced Webassign Access Code (available with purchase of book)

## COURSE COMPETENCIES

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1. Create graphical and numerical descriptions of quantitative and qualitative data.

2. Calculate probabilities and percentiles related to a general normal distribution.
3. Distinguish differences in data analysis and interpretation between observational data and data from designed experiments.
4. Calculate and interpret a confidence interval for a single parameter, using both large and small samples.
5. Perform and interpret a test of hypotheses for a single parameter, using both large and small samples.
6. Perform and interpret statistical inference on the difference of two parameters.
7. Fit and interpret a simple linear regression model, including correlation and scatterplots.

## GRADING INFORMATION

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### NCK Tech Grading Scale

A – 90-100%

B – 80-90%

C – 70-80 %

D – 60-70%

F – 59%

Instructor Grading-

Grading will be awarded on a total point basis.

Each category will be part of your grade:

Chapter assignments- these include questions asking you to solve problems related to statistics, notes, watching videos, and discussion boards that ask you for your thoughts and opinion rooted in facts from the book, followed by a reply to a classmates discussion that either agrees with their thoughts or disagrees in a thoughtful way with facts to support that idea. It is the full intention that we use the discussion platform to further our knowledge of the topic in collaboration to learn more.

3 Unit Exams

1 Cumulative Final

Extra Credit will also be offered a bit past midway through the semester.

## NCK TECH COVID 19 MASK REQUIREMENT

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All students in a classroom or lab setting will be required to wear a cloth face mask or disposable face mask. Students with a recognized disability who have an accommodation that prevents the wearing of a mask – please contact Jayme Owen at [jowen@ncktc.edu](mailto:jowen@ncktc.edu) or 785-738-9037 for student accommodations. If a student does not have a mask, one will be provided, and it must be in place at all times in the classroom or lab setting.

Disclaimer: NCK Tech, by requiring, and if needed, providing a mask, is not liable for any student who may contract the virus. The mask is simply an assist and not a guarantee. Students hereby release the College from any and all liability created by these guidelines, including providing a mask.

## NCK TECH COVID 19 STATEMENT

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NCK Tech values the health and well-being of all who are involved in higher education. In its classes, NCK Tech follows Center for Disease Control and Prevention (CDC), American College Health Association (ACHA), and Kansas Department of Health and Environment (KDHE)

recommendations for protecting students and faculty members during the Coronavirus 2019 (COVID-19) pandemic. These recommendations to lower risk include limiting the number and length of interactions with others by scheduling hybrid, virtual, or restricted sizes of classes, activities, or events, with individuals spaced 6 feet apart and not sharing objects.

Changes and limitations specific to different class types, for example, lecture, lab, and hybrid classes, will be provided in class. In all class types and educational settings, NCK Tech faculty, staff, and students are required to wear approved face masks until further notice.

NCK Tech endorses:

- staying home or self-isolating when appropriate in respect to NCK Tech student, faculty, and staff self-screening questionnaires and KSDE quarantine recommendations
- frequent, thorough handwashing and covering of all coughs and sneezes
- using of masks based on NCK Tech mask requirements
- individual conduct consistent with these considerations

NCK Tech students with questions should contact Jayme Owen, Dean of Student Success for more information.

## **NCK TECH MISSION STATEMENT**

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North Central Kansas Technical College delivers applied, innovative and personalized education to empower learners, enrich lives, develop skilled professionals and strengthen economic systems.

### Vision Statement

North Central Kansas Technical College is dedicated to being a leader in workforce development by maximizing value for students, employers and communities through educational excellence.

### Core Values

Achieving EXCELLENCE with INTEGRITY through

DEDICATION

INNOVATION

COLLABORATION

COMMUNICATION

## **NCK TECH NON-DISCRIMINATION POLICY**

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NCK Tech is committed to nondiscrimination on the basis of race, color, gender, ethnic or national origin, sex, sexual orientation, gender identity, marital status, religion, age, ancestry, disability, military status, or veteran status in admission or access to, or treatment or employment in, its programs and activities. Further, it is the policy of the college to prohibit harassment (including sexual harassment and sexual violence) of students and employees. Any person having inquiries concerning the college's compliance with the regulations implementing Title VI, Title VII, Title IX, Section 504, and the Americans with Disabilities Act

Amendments Act is directed to the VP of Student and Instructional Services (Section 504/ADA Compliance Officer and Title VI, Title VII, & Title IX Compliance Officer) at (785)738-9055, [cisbell@ncktc.edu](mailto:cisbell@ncktc.edu), or PO Box 507, 3033 US Hwy 24, Beloit, KS 67420.

## NCK TECH TOBACCO USE POLICY

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The use of tobacco products in any form and/or electronic cigarettes is prohibited in, or within ten (10) feet of any building owned, leased, or rented by the College.

## NCK TECH WEAPONS POLICY

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Individuals who choose to carry concealed handguns are **solely responsible to do so in a safe and secure manner in strict conformity with state and federal laws and NCK Tech weapons policy**. Individuals must be 21 years of age to carry concealed handguns.

Safety measures outlined in the NCK Tech weapons policy specify that a concealed handgun:

- Must be under the constant control of the carrier.
- Must be out of view, concealed either on the body of the carrier, or backpack, purse, or bag that remains under the carrier's custody and control and within immediate reach of the individual.
- Must be in a holster that covers the trigger area and secures any external hammer in an un-cocked position
- Must have the safety on, and have no round in the chamber.

Lockers, toolboxes, and/or tool bags are not approved storage devices in accordance with NCK Tech Policy.

## OVERVIEW FOR STUDENTS WITH DISABILITIES

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NCK Tech is dedicated to providing equal access and opportunity to all campus programs and services for students with disabilities. We are committed to providing reasonable accommodations in accordance with applicable state and federal laws including, but not limited to, Section 504 and 508 of the Federal Rehabilitation Act of 1973 and the Americans with Disabilities Act Amendments Act (ADAAA) of 2008. We strive to create a safe, respectful and inclusive environment and promote awareness, knowledge and self-advocacy.

NCK Tech acknowledges that traditional methods, programs and services are not always appropriate or sufficient to accommodate the limitations experienced by some qualified persons with disabilities. When a student's disability prevents him/her from fulfilling a course requirement through conventional procedures, consideration will be given to alternatives, **keeping in mind that academic standards must be maintained**.

Services are provided through Student Accessibility Services (SAS) staff located in the Student Success Center, on the Beloit Campus, and in Student Services, on the Hays Campus.

- Director of Learning Services, may be reached at [1-785-738-9020](tel:1-785-738-9020); or by mail at [NCK Technical College, 3033 US Hwy 24, Beloit, KS 67420](mailto:NCK Technical College, 3033 US Hwy 24, Beloit, KS 67420).

### **Student Responsibilities**

Students requesting support services will need to register ("self-disclose" and complete Student Accessibility Services Intake and Consent Form), provide appropriate documentation (if available) including how the disability affects academic performance and suggested accommodations, and communicate with the Director of Learning Services as part of the interactive process to create an *Educational Accommodation Plan* that will notify Instructors of approved accommodations, services and/or auxiliary aids.

Students are encouraged to make timely and appropriate disclosures and requests, at least two weeks in advance of a course, program, or activity for which an accommodation is requested (or as soon as realistically possible) to allow adequate time for accommodation services to be set in place.

### **Accommodations, Academic Support Services, or Auxiliary Aids**

Reasonable accommodations including academic support services and auxiliary aids are provided to allow students with disabilities an equal opportunity to participate in and benefit from our educational programs. Accommodations will be provided on a case-by-case

basis determined by student request, documentation, intake interview, Educational Accommodation Plan team, and assessment of individual needs and course requirements.

**Reasonable testing accommodations may include, but are not limited to:**

- Extended testing time
- Reduced distraction testing environment
- Test reader and/or scribe
- Use of calculator

**Academic support services/auxiliary aids may include, but are not limited to:**

- Note-taking assistance (second set of notes, power point slides, or other visual aids provided)
- Sign Language Interpreter
- Preferential seating in the classroom
- Large print exams, handouts, signs, etc.
- Telecommunications devices
- Use of Assistive Technology

Accommodations may not fundamentally alter the nature of the program or activity, lower academic standards, present undue financial or administrative burden on the college, or pose a threat to others or public safety.

Additionally, some accommodations and services cannot be provided, such as personal devices or assistance with personal services.

Auxiliary aids may be available through a variety of sources available to individual students. The student may make a request in obtaining specialized support services from other resources such as Vocational Rehabilitation Services (VR), Recordings for the Blind, Kansas Talking Book Service, etc. For example, Vocational Rehabilitation may fund such items as transportation to the institution, tuition, textbooks, hearing aids, and other individually prescribed medical devices.

If at any time throughout the academic year, a student feels that the agreed upon accommodations are not being followed or that alternate accommodations need to be provided, the student should notify Student Accessibility Services (SAS) staff. NCK Tech is committed to student success; however, we do not require students to use accommodations. The decision of when to utilize approved accommodations or services is up to the student. Integration, self-advocacy and individual responsibility are promoted and expected.

***Grievance Procedure***

Any student who believes he or she has been subjected to discrimination on the basis of disability or has been denied access or accommodations, shall have the right to invoke the Grievance Procedure.

Students are encouraged to first discuss their concerns with SAS. An attempt will be made to resolve the issue(s) causing concern by assisting the student in discussions with the person(s) involved. Most situations are positively resolved through this process. If the student does not feel the concern or complaint has been appropriately resolved, he or she should contact the [Vice President of Student and Instructional Services](#) at 1-800-658-4655 or [PO Box 507, 3033 US Hwy 24, Beloit, KS 67420](#), where grievance procedures are filed for all students, including students with disabilities.

If the complaint is not resolved at the College level, a student may choose to file a complaint with the [Office for Civil Rights](#) at 1-816-268-0550 or [U.S. Department of Education, One Petticoat Lane, 1010 Walnut Street, Suite 320, Kansas City, MO 64106](#).

***Confidentiality***

All information regarding a student's disability is confidential. All documentation will remain separate from academic records and will not be released to an individual or source external to NCK Tech without the student's written consent. In order to provide effective services, it may be necessary to communicate limited information on a need-to-know basis regarding disability-related needs to NCK Tech faculty and/or staff.

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## **REASONABLE SUSPICION**

If reasonable suspicion of substance abuse exists regarding an employee or student based on objective criteria (including, but not limited to, behavior, appearance, demeanor, detection of the odor of alcohol or any controlled substance), the employee or student will be requested to consent to drug testing performed by NCK Tech's contract vendor at the expense of the college.

A. A college administrator (or their designee) shall drive the employee or student to the vendor's site for drug testing and shall return the employee or student to his/her residence (or arrange for transportation) following the testing.

B. Test results shall be sent directly to the college administrator, with a copy also sent to the employee or student. All test results will be considered confidential, access to the results will be limited to institutional personnel who have a legitimate need-to-know.

C. In the event of a positive test result, the employee or student may request a retest of the sample at the employee or student's expense. The request must be submitted within 24 hours.

D. Positive results for any illegal drugs, or prescription drugs (either not prescribed for the employee or student, or at levels above the prescribed dosage), or blood alcohol level of 0.04 or greater shall be grounds for disciplinary action, up to and including termination or expulsion.

E. Refusal to provide a specimen for this testing shall be treated as a positive drug test result.

F. Test results or specimens that have been determined to be altered by the employee or student shall be grounds for disciplinary action, up to and including termination or expulsion.

G. If the employee or student tests positive for an authorized prescription drug which may impair his/her performance or judgment, the employee or student may not be permitted to participate in college activities until he/she provides a doctor's release.

## **RIGHT TO MODIFY THE SYLLABUS**

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The instructor reserves the right to modify the syllabus during the semester. Students will be given advanced notice if a change would occur.

## **SCHOLASTIC DISHONESTY**

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Membership in the NCK Tech learning community imposes upon the student a variety of commitments, obligations, and responsibilities. It is the policy of this college to impose sanctions on students who misrepresent their academic work. Appropriate classroom instructors or other designated persons will select these sanctions consistent with the seriousness of the violation and related considerations.

Examples of scholastic dishonesty include but are not limited to:

- Plagiarism: i.e. taking someone else's intellectual work and presenting it as one's own. Each department set standards of attribution. Faculty will include disciplinary or class-specific definitions in course syllabi.
- Cheating is unacceptable in any form. Examples include consultation of books, library materials, notes or intentional observation of another student's test on paper or a computer screen; accessing another student's answers from an exam to be given or in progress; submission of falsified data; alteration of exams or other academic exercises; and collaboration on projects where collaboration is forbidden.
- Falsification, forgery or alteration of any documents pertaining to assignments and examinations.
- Students who participate in, or assist with, cheating or plagiarism will also be in violation of this policy.

Classroom instructors and/or administrators will assess sanctions for violations of this policy. The seriousness of the violation will dictate the severity of the sanction imposed. Academic sanctions may include but are not limited to any of the following:

1. verbal or written warning
2. lowering of grade for an assignment
3. lowering of term grade

Administrative sanctions may include but are not limited to either of the following

1. suspension from the College
2. dismissal from the College

## **NCKTC INCLEMENT WEATHER POLICY**

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School dismissals and cancelations will be announced using the NCKTC RAVE Alert system. Local media will also be notified.

## **NCKTC KANSAS CORE OUTCOME STATEMENT**

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The learning outcomes detailed in this syllabus meet, or exceed, the learning outcomes specified by the Kansas Core Outcomes Project for this course, as sanctioned by the Kansas Board of Regents.

## **STUDENT POLICIES**

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### **Communication**

Due to this being an online course, you are expected to log into the ethink (learning management) and Enhanced WebAssign site and complete the homework every week. If I see that you have not logged into these sites during the week then I will count you absent. You are permitted 1 absence before you choose to fail this this course (example, if you do not log in for two weeks in a row, you will fail this class.) I will work with you if you will communicate with me. Being that this is online, communication is more essential than having a face-to-face class with me. Please make sure that you are taking care of communicating with me on your end.

If you have questions about the course, please ask immediately. I am always available to answer any of your questions and will get back to you in a timely manner (usually 24 hours but definitely within 48 hours unless over the weekend).

### **Assignments**

Assignments are due on the day, date, and time (usually Sunday nights at 11:59 pm) that it indicates on the information that is to be read. Please make sure that you adhere to that schedule. This is not YOUR time but ENHANCED WEBASSIGN time so be sure that you are paying attention to that because if you submit the assignment late, you will not be given credit for it. (Pay attention the ethink site time as well because when you submit your discussion boards and replies they are due at 11:59 pm also).

No late assignments will be accepted without prior approval of instructor. If you do not take a test on time, you are not allowed to take it later than the original time. You will have a week to prepare and you should make sure that you are

preparing for all the things that will (and do) come up at the last minute. In other words, please do not wait to the last minute to submit an assignment or complete a test or discussion board and expect that if something happens that you are going to be given a provision because of that issue. Prepare for disasters!

You will also be required to post to a discussion board every week. Your written answer will be due on Wednesday or Thursday and then you must reply to two students by Sunday at 11:59 pm. These are important and will diminish your grade if not completed properly or on time.

### Tests

You are permitted to use notes on your test and it is highly suggested that you have them made prior to showing up for the test. You are also permitted to use your book and a calculator. Your tests will be timed and that time limit will be enforced so please make sure that you submit the test in the time allotted. (In other words, prepare for your tests by studying and do not click to start the test until you are sure you are ready and leave yourself enough time to finish on time. It is not recommended to use your book for every question as it will drastically slow you down but you are able to use it as a resource.)

### Studying

It is important that you study twice as many hours and you should be in class and add the number of hours that you are taking in the class to that. For this class, because it is a 3 hour class, please take that 3 and double it...  $3 \times 2 = 6$ . Then add the 3 to the 6 and that gives you how many hours you should be spending on this class.  $6 + 3 = 9$ . Be aware that without studying and using your time to get through this class... it will be difficult to do well.

### Help

If you are in need of help, please find a tutor. Another good resource I have found for Algebra is Khan Academy on Youtube (watching some of his lectures). I prefer Professor Leonard because he does a great job explaining concepts. Other things that will help you are the PowerPoints for the class. I have made them from the material I go over with in the face to face classes and that will tell you what information is important to know. Some of the PowerPoints also have a couple videos that I found helpful too.

“Education is the most powerful weapon which you can use to change the world.”

— Nelson Mandela

## SCHEDULE

Date/Session	Date	Competencies	Chapter	Activities
Week 1	Jan 11-17	Create graphical and numerical descriptions of quantitative and qualitative data.	P	Research Activities
Week 2	Jan 18-24	Create graphical and numerical descriptions	Chapter 1- 2	Discussion/ Reply

Date/Session	Date	Competencies	Chapter	Activities
		of quantitative and qualitative data.		WebAssign Lesson Readings Videos
Week 3	Jan 25-31	Create graphical and numerical descriptions of quantitative and qualitative data. Fit and interpret a simple linear regression model, including correlation and scatterplots.	Chapters 3- 4	Discussion/ Reply WebAssign Lesson Readings Videos
Week 4	Feb 1-7		Chapters 1- 4	Test 1 (Ch 1-4)
Week 5	Feb 8-14	Create graphical and numerical descriptions of quantitative and qualitative data. Calculate probabilities and percentiles related to a general normal distribution. Distinguish differences in data analysis and interpretation between observational data and data from designed experiments. Calculate and interpret a confidence interval for a single parameter using both large and small samples.	Chapter 5	Discussion/ Reply WebAssign Lesson Readings Videos
Week 6	Feb 15-21	Create graphical and numerical descriptions	Chapter 6	Discussion/ Reply WebAssign Lesson Readings

Date/Session	Date	Competencies	Chapter	Activities
		<p>of quantitative and qualitative data.</p> <p>Calculate probabilities and percentiles related to a general normal distribution.</p> <p>Distinguish differences in data analysis and interpretation between observational data and data from designed experiments.</p> <p>Calculate and interpret a confidence interval for a single parameter using both large and small samples.</p>		Videos
Week 7	Feb 22-28	<p>Create graphical and numerical descriptions of quantitative and qualitative data.</p> <p>Calculate probabilities and percentiles related to a general normal distribution.</p> <p>Distinguish differences in data analysis and interpretation between observational data and data from designed experiments.</p> <p>Calculate and interpret a confidence interval for a single parameter using both large and small samples.</p>	Chapter 7 (7.1- 7.3)	<p>Discussion/ Reply</p> <p>WebAssign Lesson</p> <p>Readings</p> <p>Videos</p>
Week 8	Mar 1-7	<p>Create graphical and numerical descriptions</p>	Chapter 7 (7.4- 7.6)	<p>Discussion/ Reply</p> <p>WebAssign Lesson</p> <p>Readings</p>

Date/Session	Date	Competencies	Chapter	Activities
		<p>of quantitative and qualitative data.</p> <p>Calculate probabilities and percentiles related to a general normal distribution.</p> <p>Distinguish differences in data analysis and interpretation between observational data and data from designed experiments.</p> <p>Calculate and interpret a confidence interval for a single parameter using both large and small samples.</p>		Videos
Week 9	Mar 8-14	<p>Create graphical and numerical descriptions of quantitative and qualitative data.</p> <p>Calculate probabilities and percentiles related to a general normal distribution.</p> <p>Distinguish differences in data analysis and interpretation between observational data and data from designed experiments.</p> <p>Calculate and interpret a confidence interval for a single parameter using both large and small samples.</p>	Chapter 8	<p>Discussion/ Reply</p> <p>WebAssign Lesson</p> <p>Readings</p> <p>Videos</p>
Week 10	Mar 15-21		Chapters 5- 8	Test 2 (Ch 5-8)

Date/Session	Date	Competencies	Chapter	Activities
Week 11	March 22-28	No Classes- Spring Break		
Week 12	March 29- April 5	<p>Create graphical and numerical descriptions of quantitative and qualitative data.</p> <p>Calculate probabilities and percentiles related to a general normal distribution.</p> <p>Distinguish differences in data analysis and interpretation between observational data and data from designed experiments.</p> <p>Calculate and interpret a confidence interval for a single parameter using both large and small samples.</p> <p>Perform and interpret a test of hypothesis for a single parameter, using both large and small samples.</p>	Chapter 9	<p>Discussion/ Reply</p> <p>WebAssign Lesson</p> <p>Readings</p> <p>Videos</p>
Week 13	April 6-11	<p>Create graphical and numerical descriptions of quantitative and qualitative data.</p> <p>Calculate probabilities and percentiles related to a general normal distribution.</p> <p>Distinguish differences in data analysis and interpretation between observational data and</p>	Chapter 10	<p>Discussion/ Reply</p> <p>WebAssign Lesson</p> <p>Readings</p> <p>Videos</p>

Date/Session	Date	Competencies	Chapter	Activities
		<p>data from designed experiments.</p> <p>Calculate and interpret a confidence interval for a single parameter using both large and small samples.</p> <p>Perform and interpret a test of hypothesis for a single parameter, using both large and small samples.</p> <p>Fit and interpret a simple linear regression model, including correlation and scatterplots.</p>		
Week 15	April 12-18	<p>Create graphical and numerical descriptions of quantitative and qualitative data.</p> <p>Calculate probabilities and percentiles related to a general normal distribution.</p> <p>Distinguish differences in data analysis and interpretation between observational data and data from designed experiments.</p> <p>Calculate and interpret a confidence interval for a single parameter using both large and small samples.</p> <p>Perform and interpret a test of hypothesis for a single parameter, using</p>	Chapters 11	<p>Discussion/ Reply</p> <p>WebAssign Lesson</p> <p>Readings</p> <p>Videos</p>

Date/Session	Date	Competencies	Chapter	Activities
		both large and small samples. Fit and interpret a simple linear regression model, including correlation and scatterplots. Perform and interpret statistical inference on the difference of two parameters.		
Week 16	April 19-25		Chapters 9-11	Test 3
Week 17	April 26-May 2		Chapter 1-11	Final Exam