

Math 153 Syllabus-Online

CCBC, Catonsville Campus
MATH 153: Intro to Statistics Methods

School of Math and Science
Sections: WC1

I. Basic Course Information

- A. Instructor: Debra Loeffler, Associate Professor of Mathematics
- B. Semester: Fall 2009
- C. Office Location: E204-F
- D. Instructor's contact information: WebCT email or dloeffler@cCBCmd.edu , 443-840-4255
- E. Math Department: 443-840-4251
- F. Instructor's office hours: Online Monday & Wednesday from 6-7 pm and other various times when needed.
- G. Pre-requisites: High school Algebra I and Algebra II, and a satisfactory score on mathematics placement test or MATH 083. Exemption from or successful completion of Reading 101. Basic Knowledge of the computer is needed as well as sending emails with attachments.
- H. Course Objective: Math153 is to apply statistics to everyday life and to a wide range of problems in majors chosen by the students - business, nursing, psychology, etc. Various persons and interests can be represented by the examples chosen to illustrate the various statistical techniques. Most academic areas have problems that are solved by statistics. Almost every ethnic group can be represented in the instructor's choice of examples. This course provides students with the "knowledge and skills to understand themselves and others from various cultural and social ... perspectives." Statistical problems are illustrated with diverse groups from our multi-ethnic society. Technology is used heavily in applying statistics to problems. Calculators and computer software are used to solve statistical problems more easily. Some instructors assign projects, so that students work together as a team, learn how to research a topic, or learn how statistics is used in a very practical sense. Other instructors assign papers so that students learn to research a statistical area more deeply. Thus, in addition to learning the body of statistical knowledge, students learn other skills, which will be valuable to them.

II. Course Goals -- Introduction to Statistical Methods provides a basic survey of data analysis. Data collection and packaging, sampling distributions, elementary methods of decision making, and computer applications are considered. Topics include probability concepts, the normal and binomial distributions, correlation and regression, z- and t-tests, chi-square and ANOVA. Students in the areas of education, business, and the sciences will find that this course enhances and clarifies large portions of literature in their specializations.

- A. Learning outcomes as listed on the official common course outline:
 1. Demonstrate the relationship of statistics to the modern world
 2. Apply technology to statistical problems.
 3. Assess statistical reasoning in everyday life.
 4. Describe data with appropriate measures of central tendency and variability
 5. Evaluate statistical graphs.
 6. Analyze linear regression and correlation problems.
 7. Examine statistical concepts as they apply to diverse populations.
 8. Compute binomial probabilities.
 9. Compute normal distribution probabilities.
 10. Apply the fundamentals of probability and the addition and multiplication rules to introductory problems.
 11. Evaluate confidence intervals in order to make informed decisions about data.
 12. Determine the validity of conclusions about a population by performing hypothesis tests.
 13. Perform independence and/or goodness-of-fit tests using the chi-square distribution and data obtained in everyday life.
 14. Solve "real-world" problems using a one-way ANOVA.
 15. Construct a solution to real world problems using problem methods individually and in groups.
 16. Examine the mathematical contributions made by people from diverse cultures throughout history.
 17. Articulate a solution to mathematical problems.

II. Evaluation

- A. Requirements:

Projects: 80% Projects will be saved in a file or scanned into a file and then emailed to the instructor by the due date. Grades for the projects will available with 2 weeks of submission in the gradebook.

 - Project 1: 20%
 - Project 2: 20%
 - Project 3: 20%
 - Project 4: 20%

Final Exam: 20% The final exam grade will be available in the webct gradebook within 1 week of the student taking the exam.
Chapters 1-12 From Practice Problems-On Separate Sheet

There is no make-up for the final exam unless there is appropriate documentation. For example: Doctors note, Court Notice, etc. It will up to the instructor's discretion to determine if documentation is appropriate. The final exam is given in the testing center on one of the main campuses and an appointment is needed. The Final will be available during final exam week, so check the calendar for those dates. Incompletes are not given unless the student is passing, has finished at least 80% of the material, and has appropriate documentation for why they could not finish the course within the timeframe of the semester.

B. Instructor's grading policy

Final Grade* : 90-100 % = A; 80-89% = B; 70-79 % = C; 60-69% = D; below 60% = F

C. Instructor's attendance policy:

1. Please note the deadline, November 6th for withdrawing from a course. Failure to officially withdraw from a class you have stopped attending may result in an "F" grade.
2. Audits are given during the first week of the semester only! After the 1st week, students who feel as though they do not have a chance to pass the course, should drop the class.
3. Students are expected to access the course at least twice a week to see if there is any important information that has come up during the week, i.e. changes to the course, webct issues, etc. If a student does not login to the course within 2 weeks, the instructor will deny the student access until the student contacts the instructor, using dloeffler@cCBCmd.edu.

III. Course Procedures

A. Materials (texts, equipment and supplies): Discovering Statistics by Daniel Larose , ISBN: 9781429227988, Version 15 of Minitab software and a calculator.

Minitab software may be rented directly from www.e-academy.com/Minitab : choose Minitab Statistical Software, then Rent Minitab 15 English. The price is \$29.99 for a 6-months rental (may change depending upon semester year). For those wishing to rent Minitab 15 for a 30 day trial, access www.minitab.com , click on Download, then Minitab Statistical Software Trial. **If you do not want to purchase Minitab or have a computer that does not have the memory to use Minitab, computers in the Library on each campus can be used. Please check their hours of operation to ensure that you can complete your work on time.**

Calculator requirements : Any calculator can be used. Scientific is the best for this course and the TI's are the most user friendly.

B. Special Procedures: If you are taking this course out of state, then an institution and proctor will be needed for when you take the final. That information needs to be sent to me before the end of 3 weeks into the semester so that the institution and proctor can be evaluated.

C. Tentative list of dated assignments See WebCT Calendar for all dates of projects, final exam and other important dates.

D. Course Repeat Policy: Policy on Repeated Courses, page 194 of the 2004-2006 CCBC catalog states, "Students may repeat a course only once without permission. When a student repeats a course, only the higher grade is computed into the Quality Point Average (QPA). All grades will remain on the student's transcript. Before a student is permitted to register for the course for a third time, the student must have the permission of the academic dean responsible for the course. Before a student may repeat a developmental course that he or she has failed twice, the student's record must be reviewed by a support team which will make recommendations regarding enrollment." Please note: The instructor does not have the authority to grant permission to register for a third attempt at the course.

E. Services for Student with Disabilities

CCBC is committed to providing equal access to educational opportunities for all students by arranging support services and reasonable accommodations for students with disabilities. A student with a disability may contact the appropriate campus office for an appointment to discuss reasonable accommodations. An appointment must be scheduled within a time period which allows staff adequate time to respond to the special needs of the student. The student must provide the appropriate office with proper documentation supporting the need for reasonable accommodations.

CCBC's Disability Support Service Offices Contact Information

CCBC Catonsville	K Building, room 205	443-840-5246 443-840-4553 (TTY)
CCBC Dundalk	A Building, room 100	443-840-3774 443-840-3529 (TTY)
CCBC Essex	A Building, room 210	443-840-1741 443-840-1601 (TTY)

F. Code of Academic Integrity: For the College to make its maximum contribution as an institution of high learning, the entire college community must uphold high standards of integrity, honesty, and ethical behavior. In seeking the truth, in learning to think critically, and in preparing for a life of constructive service, honesty is imperative. Each student has a responsibility to submit work that is uniquely his or her own, or to provide clear and complete acknowledgement of the use of work attributable to others. To these ends, the following actions are expected of students:

- Complete all work on exams without assistance.
- Follow the professor's instructions when completing all class assignments.
- Ask for clarification when instructions are not clear.
- Report to the instructor any unauthorized information related to an exam.
- Provide proper credit when quoting or paraphrasing.
- Submit only one's own work.

Students who do not accept responsibility for the integrity of their own work will experience sanctions, including a written reprimand, failure of the assignment, failure of the course, and/or dismissal from the program. For repeat and extreme offenses, the College reserves the right to suspend or expel students.

G. Inclement Weather / Emergency Closing Policy: In the event that the college (or a specific campus) opens late due to weather-related or other emergency conditions, classes will commence at the announced opening time and resume the normal schedule thereafter for the remainder of the day. Faculty, students, and classified staff should report to wherever they would normally have been at the announced opening time.**

When the college closes because of severe weather or emergency conditions, announcements of class cancellations are made on local radio and television stations and the college website (www.ccbc.md.edu). Closings and delays will also be recorded on the campus weather lines:

Catonsville	443-840-4567
Dundalk	410-282-6700
Essex	410-780-6711

H. Tutoring Services: Students are encouraged to seek help from their instructors whenever they encounter academic difficulty (either during scheduled office hours or by appointment). In addition, each campus offers free academic support services. For more information, contact:

Campus:	Office:	Room:	Phone:
Catonsville	Tutoring Services	K 205	443-840-5959
Dundalk	Tutoring Services	CAR-530	443-840-3666
Essex	Student Success Center	A-307	443-840-1820

I. Civility and Community Building Expectations - Creating a Culture of CARE© (Compassion, Appreciation, Respect, Empowerment)

As members of the CCBC community of learners, we are expected to act with respect, honesty, responsibility and accountability. Each of us is expected to be aware of the impact our behavior has on the community. CCBC wishes for each learner to commit to the following actions:

- Become an active and engaged learner
- Celebrate the richness of our diversity
- Respect the campus and its code of conduct
- Practice empathy and compassion
- Promote the empowerment of others

J. Major Religious Holiday Policy: Students not attending class because they are observing major religious holidays shall be given the opportunity, to the maximum extent possible, to make up, within a reasonable amount of time, any academic work or tests they miss. Please see Part IIIC3 for details.

K. Student e-mail accounts: CCBC has joined the ranks of the very few community colleges in Maryland who provide email accounts to all credit students. Each student who is registered in credit classes now has an email account and up to 5 Mb of storage in their mail box. This account will not be deleted even if the student graduates or leaves CCBC for any reason.

For information about the system and how students can determine their email address, go the CCBC Home Page and click on "Student Email". From here students can find their email address, get to an on-line user manual and access instructions on how to forward the CCBC email to the system of choice (AOL, Comcast, Hot Mail, etc.)

IV. Other Items

Technology Policy:

Calculators. See Required Text and Materials (above).

Computers and Software. Students are expected to use computers, the Internet, and Minitab software both in and out of class. There will be questions on tests and class activities that reflect technology and content learned from the technology. Computers will not be used during Comprehensive Tests. Minitab is loaded on the classroom computers, in the D102 lab, on the Catonsville library lab computers, Catonsville. Also see IVA above.

Information Sources.

Statistics, in application, is as much an art as a science; thus, methods vary across texts, instructors, and software. To diminish ambiguity for this class, the lecture notes and handouts are the final authority on statistics methods.

Other Topics of Importance:

(1) Auditing. Audits will only be approved during the 1st week of class. After that date, no audits will be given.

(2) Academic Integrity. Tests and projects are independent activities. There are severe penalties for cheating.

(3) Online Behavior. **Students are to use appropriate etiquette in all chats, discussions and emails that are directed to the instructor and other students. If a student does not follow this, on the 1st infraction, the student will be given a warning thru email. If the inappropriate behavior continues, the discussions and emails will be deleted and the student will be denied access to the course.**

Testing Centers:.

CCBC Catonsville Testing Center

E-mail (preferred): catonsville.testingcenter@ccbcmd.edu

Phone: 443-840-5246

Location: K-205, Catonsville Campus, Testing Center

CCBC Essex Testing Center

E-mail (preferred): etc@ccbcmd.edu

Phone: 443.840.1901

Location: A-214/215, Essex Campus, Testing Center

CCBC Dundalk Testing Center

E-mail (preferred): dtc@ccbcmd.edu

Phone: 443-840-3572

Location: L-112, Dundalk Campus, Back of Library

Course Outline

INTRODUCTION TO STATISTICAL METHODS

Course: Math 153 - 4 credits, 4 billable hours - INTRODUCTION TO STATISTICAL METHODS provides development of data analysis. Topics include descriptive statistics, probability, and inferential statistics through ANOVA.

Text: *Discovering Statistics*, Daniel Larose, Freeman Publishing

Topic	Source	Time Allotted-See Calendar
The Nature of Statistics	Chapter 1	
Describing Data Using Charts and Tables	Chapter 2	
Describing Data Numerically	Chapter 3	
Describing Relationships Between Two Variables	Chapter 4	
Probability	Chapter 5	
Random Variables & Normal Distribution	Chapter 6	
Sampling Distribution	Chapter 7	
Confidence Intervals	Chapter 8.1-8.3, 8.5	
Hypothesis Testing	Chapter 9.1-9.5	
Inference with 2 Means	Chapter 10	
Categorical Data Analysis-Chi-Squared	Chapters 11	
Analysis of Variance (ANOVA)	Chapter 12	

There is no real timeframe to complete the material, but projects have a due date (in calendar), so material needed to complete the projects need to be finished at least a week before that date, so that students with enough time to complete the project.