##### UNIVERSITY OF DELAWARE

##### DEPARTMENT OF MATHEMATICAL SCIENCES

##### Math 113: Contemporary Mathematics

**Spring 2018**

**Required Course Materials:**

* **ACCESS TO MY MATH LAB: You are required to purchase access to My Math Lab (MML), an online web based program. Graded activities will be accessed through this program.** You can purchase the access code by buying the code separately in a student access kit/card at the campus bookstore or buy access to a course online with a credit card or PayPal account. The student access code is nontransferable and can be used only once. In addition to your **student access code**, you will need the **course code** from your instructor to register. Instructions for registering in MML will be found in a document in our course website in Canvas.
* **TEXTBOOK: *Excursions in Mathematics*, by P. Tannenbaum, Pearson Publishing, 9th edition.**

**ISBN: 978-0134468372**

You may use the e-version of the textbook although many students prefer having the textbook available. It is not required that you purchase a hard copy of the textbook, but you may do so if you would prefer to have one in addition to the eText provided through MML.

* **Graphing Calculator:** You will need a calculator whose functions include entering and analyzing data for statistics and probability. A graphing calculator is easy to use and will be used in class. I will be using a TI-84 in class. You must have a calculator for the exams and cannot use a cell phone, computer or any electronic device with web access during an exam. You may not share calculators during an exam.

**Course Prerequisites:** Math Placement Exam levels are Level G or above. You should have some familiarity with basic algebra and using a calculator.

Course Description**:** This course is designed as an alternative to the traditional college algebra MATH114 course for liberal arts majors. It is a three-credit course that fulfills the College of Arts and Science mathematics requirement for many majors. The course consists of four modules: Management Science (mathematical solutions to managing resources), Statistics and Probability, Growth and Finance (types of growth and implications to basic finance), and Social Choice (voting methodologies). You will study descriptive and inferential statistics to understand and critically evaluate the reports of experiments or observational studies. You will use mathematical algorithms to study management science techniques and determine optimal solutions through analysis of various models. The basics of Finance will be explored by studying different types of growth and several types of investment and loans. Mathematical methods will be applied to social choice by analyzing voting systems and their strengths and weaknesses.

The general topic goals of the course are: 1) to learn how mathematical algorithms are applied to investigate real-world problems; 2) to construct, evaluate, and interpret data; 3) to appreciate how mathematics is used in a variety of disciplines; and 4) to understand and apply the concepts of computational thinking.

**WARNING: This is NOT a standard algebra-based math course. You will learn about the application of several non-algebraic mathematical algorithms to fields of study that you may not have seen before. Be prepared to spend several hours after every class on this course. If you are looking for a math course with familiar algebra topics, you may want to enroll in Math 114 College Mathematics and Statistics.**

**Course Management and Class time:**

Each section of MATH 113 meets each week in three 50 - minute classes. **You are expected to attend class. Attendance will be taken.** During class we will be discussing new topics, answering questions from MyMathLab or the textbook or discussing problems, sometimes in teams or groups. The structure of class time will be varied. At times it will include lecture and at other times, the focus will be more on students working problems with guidance as needed. It is expected that class time will be used to clarify concepts and ideas which students are encountering in completing the work for the course. Come to class prepared to be engaged in what we are doing. In addition, quizzes and other graded activities, either individual or in teams, will most likely be during class.

After every class, your assignment is to work through the associated textbook problems, My Math Lab activity and prepare for the next class by reading the textbook or, in some cases, watching a video. You are urged to keep your classroom notes, solutions to MML activities and textbook problems organized in a loose leaf binder that you bring to class and to office hours when needed. Doing well in this course means preparing OUTSIDE of class.

NOTE: MML is an extremely valuable resource and will provide some guidance on how to complete several of the problems. Most of your questions on the assigned textbook problems can be answered either through My Math Lab or during my office hours.

**Canvas Course Website:**

Many of the course handouts, announcements or any other course materials will be provided through our Canvas website. Course grades will generally be posted through this site. Be sure you are keeping a record of your grades and are aware of how you are doing in the course. Do not wait until the end of the semester to determine that your grade is not what you are hoping it will be.

Canvas is UD’s online learning management system.

Information on how to use Canvas is available through the [Canvas Student Guide](https://community.canvaslms.com/docs/DOC-10701): (<https://community.canvaslms.com/docs/DOC-10701>)

Canvas is accessible via MyUD or directly at <http://www.udel.edu/canvas>.

**Course Grades and Assessments:** Your final course grade will be based on the following assessments:

**Mid-semester Exams (3 @ 100 points each) 300 points**

**Final Exam 120 points**

**Instructor assignments and/or quizzes 80 points**

**My Math Lab Activities 50 points**

**Total 550 points**

**Exams: Math 113 exams are administered on Wednesdays March 7th, April 11th, and May 2nd at 5 pm.** Each exam is tentatively scheduled for one hour and 15 minutes. The room assignment for exams will be announced in class. Bring pencils, eraser, and a graphing calculator to every exam. **NO ELECTRONIC DEVICES** including phones, iPads, small computers, language translators, smart watches or other devices that access the web are allowed. You may not use the calculator on a cell phone during an exam!

**IMPORTANT!!**  Due to the large numbers of students taking this course, these are the only days and times the exams are given. It is your responsibility to ensure you have no scheduling conflicts. The exam dates and times are *not* negotiable. Do not schedule any other activity (course or work related) during these dates and times.

**Make-up Exam Policy: *Exams are important indicators of course progress and missing an exam (even with an acceptable reason) will make it difficult to monitor and maintain your course progress. Students should carefully consider the implications of missing an exam.***

If you do miss an exam or other activity (e.g. quiz), you will need to provide documentation and contact your instructor within 24 hours of the event. When possible, contact your instructor prior to the exam. If you have a university-approved excused absence, provide appropriate documentation, and have notified your instructor immediately, only then will you be allowed to take a make-up exam (or other activity) within 10 days of the scheduled date of the exam or activity. This make-up exam or activity will be given in a format of the instructor’s discretion, possibly cover slightly different topics and scheduled according to departmental guidelines. If a student does not show up during the scheduled make up exam time, then the student will receive a zero for that grade.

**Tentative Exam Coverage:** *The following topic coverage is subject to change:*

**Exam 1: Wednesday, March 7th: Management Science Chapters 5, 6, 8**

**Exam 2: Wednesday, April 11th: Statistics and Probability Chapters 14, 15, 16**

**Exam 3: Wednesday, May 2nd: Growth and Finance Chapters 9, 10**

**The final deadline to withdraw from the course is April 9. If you are having difficulty with the course, you may want to meet with you adviser to consider your options prior to this deadline.**

**Final Exam**: The final exam will be scheduled by the University during finals week. Please do not make travel arrangements until you know when all your final exams are scheduled.The final exam is cumulative and will count towards your final course grade. It covers all the sections listed in the Textbook Assignments, including sections covered after the third exam.

**Instructor assignments and/or quizzes:**

In-class quizzes will generally be announced at least one class prior to the quiz. Other activities may not be announced. These other activities will include performance on problems, worksheets, or team activities. If you miss an assignment or quiz due to a university approved absence, contact me that day. Keep in mind the make-up activity may be in a different format and cover different material.

**My Math Lab Activities:** Homework problems will be completed and submitted on a regular basis usingMyMathLab. **MML** activities will be worth 50 points in the calculation of the course grade. My Math Lab is described later in this document. There will be a MML activity due almost every week. It is your responsibility to check the due dates of assignments in MML.

**Course grades will be assigned according to how many POINTS you earn on the following scale.**

**Grades Total Points Percentage**

A 495 – 550 points 90 – 100

A- 479 – 494 points 87 – 89

B+ 462 – 478 points 84 – 86

B 440 – 461 points 80 – 83

B- 424 – 439 points 77 – 79

C+ 407 – 423 points 74 – 76

C 385 – 406 points 70 – 73

C- 369 – 384 points 67 – 69

D+ 352 – 368 points 64 – 66

D 330 – 351 points 60 – 63

D- 314 – 329 points 57 – 59

F less than 314 points less than 57

*A large number of students are taking this course and these exams. It is important that all students be treated the same and grading be consistent. For this reason, there are no exceptions to this grading scheme. No exam grades will be dropped, curved, or modified. There is no extra work that you can do to modify your grade.*

***Grades are final and not negotiable****.*

**Questions on grading:** All questions and concerns about grades and grading of exams, quizzes and other course materials must be brought to my attention within 24 hours of the return of the exam or graded course material. We will meet in my office to discuss your concerns, please do not try to catch me before or after class. Grades will not be discussed by email.

If you have any further concerns about the course grade policies, please see me during office hours.

**Daily assignments:** *Completing math assignments every day is the single most important thing you can do to learn the course material.*Several activities may be assigned regarding a particular topic – completing worksheets, watching videos and, most often, completing assigned textbook problems and MML activities. Videos, handouts, and any other course materials are found at the Canvas course website. Textbook problems are listed below and found in two sources - the course textbook and My Math Lab (a web-based program associated with the course textbook). *Completing the textbook problems offer the most complete and instructive activity to learn the material. MML activities provide initial guidance on the textbook problems but do NOT have all the types of problems that are on exams, so please look at both resources.*

**Textbook Problems:**

Conceptual understanding and procedures will only make sense if problems are practiced – you will not understand the ideas if you do not practice the problems! Two class resources provide this practice –the textbook and My Math Lab activities. The textbook has a problem set at the end of each chapter. The assigned problems are listed in the table below. (The answers to the odd numbered problems are at the back of the text.) It is expected that you will work each of the assigned textbook problems as the associated sections of the course are discussed in class. Unfortunately, the textbook cannot provide you with immediate feedback to your answers other than your answer is correct or incorrect. The second resource, My Math Lab, can provide more problem solving assistance. Don’t forget that you must work both of these resources – the My Math Lab activities and the textbook assigned problems.

***You should plan on spending several hours working on both the My Math Lab activities and the textbook problems each day.***

All solutions to these problems (as well as your work in the other class activities) should be organized in a loose leaf notebook.

**WARNING: My Math Lab problems do not test your understanding of creating graphs and schedules. You will need to work carefully on the textbook assigned problems. In general, if you are selecting an answer from a list of graphs or images, you will want to be sure to practice creating these yourself from the textbook assignments.**

|  |  |  |  |
| --- | --- | --- | --- |
| Chapter | Title | Page | Assigned Problems |
| 5 | The Mathematics of Getting Around | 162 | 1 – 23 odd, 26, 27 – 55 odd, 67 |
| 6 | The Mathematics of Touring | 194 | 1, 3, 5, 7, 11, 13, 15, 17, 19, 25, 27, 31, 33, 35, 37, 39, 43, 45, 47, 49, 51, 53, 57 |
| 8 | The Mathematics of Scheduling | 247 | 1 – 13 odd, 17, 19, 21, 23, 27, 29, 31, 35, 35, 37, 39, 43, 45, 46, 47 – 57 odd |
| 14 | Censuses, Surveys, Polls, and Studies | 434 | 1 – 23 odd, 24, 25, 27, 31 – 47 odd |
| 15 | Graphs, Charts, and Numbers | 463 | 1 – 5, 7 – 19 odd, 20, 21, 23, 25, 26, 27, 29, 30,  31 – 45 odd, 46, 47, 49, 50, 51, 53, 55, 57, 58, 59 |
| 16 | Probabilities, Odds, and Expectations | 501 | 1, 3, 5, 11, 13, 14, 16, 17, 19, 21, 25, 27, 29, 33, 37, 39, 40, 42, 44, 45, 53, 55, 57, 59, 61, 63, 65 |
| 9 | Population Growth Models | 284 | 1 – 15 odd, 19, 21, 23, 27, 29, 37 – 49 odd |
| 10 | Financial Mathematics | 320 | 1 – 31 odd, 35 – 41 odd, 45 – 53 odd, 57, 59, 61, 65 |
| 1 | The Mathematics of Elections | 29 | 1 – 7 odd, 11 – 37 odd, 41 – 47 odd, 51, 53, 57, 59 |

**Where to get assistance:** Any time you are having difficulty with the assignment or are concerned about your course progress, please contact your instructor or come during office hours. *Bring your loose leaf binder with your problem assignments and course notes!* Be specific with questions on problems– determine exactly where you are having difficulty and show me your work.

**Office of Academic Enrichment:** This campus resource provides a list of individual tutors for hire and also some free tutorial resources. Please look on the web [www.ae.udel.edu](http://www.ae.udel.edu) for more information. If you hire a tutor, make sure the tutor is well aware of the course topics!

**MSLL:** The Mathematical Sciences Learning Laboratory offers free, drop-in tutoring. It also provides a quiet, supportive environment in which to work on your math course. If you have questions for a tutor, be sure to tell them the course and topics you are working on to be sure they are familiar with it. MSLL is currently located in the Kent Dining Hall.

**My Math Lab:**

My Math Lab is an online textbook associated program. For this course, there are twelve required course activities that consist of nine homework assignments that mirror the textbook assignments and three Exam review activities. A complete schedule of due dates is available through the My Math Lab course home page.

The homework assignments are designed to help you work through the textbook assignments and ***should be started and worked on as the material is introduced in class.*** The problems in the activities mirror those in the textbook and should be completed in tandem with the textbook exercises. You are allowed to go in and out of these activities just as you would work on your textbook assignment. In fact, some of these activities could take as long as four hours to complete so don’t plan on completing them all in one sitting. Plan on starting these activities as you begin the textbook exercises and work on them repeatedly throughout the week(s) until the due date. Each problem will allow up to four submissions to get it correct. After the first two attempts, if unsuccessful, I would suggest you discuss the problem with another classmate to see how he/she solved the problem. Collaboration on these activities is sometimes possible as long as you are learning the material. Keep in mind you can only learn the material if you alone can do the problems!

The Exam Review activities are designed to decrease the amount of help you receive while working the problems and to provide a summary of what you have been practicing. You can work on these problems throughout the week that the review is available. The review is really about measuring your knowledge and is not meant to be practice. It is a collection of problems from the chapters which will be covered on the exam. It is not a sample exam. Work through these problems on YOUR OWN so you get the most accurate information about your preparation for your “real” exam.

**DUE DATES: The My Math Lab course homepage includes a list of all these course activities and their due dates. Changes to the due dates may be announced in class or posted in Canvas. If you have any concerns, please contact your instructor. You are responsible for knowing when the assignment is due.**

After you have registered in My Math Lab, please look at the other activities and the other available resources. You may be surprised at the number of apps, videos, and other resources accessible. An individualized study plan is developed as you work through the materials that is not required but you might find useful.

**Student registration instructions can be found in a document in the resources of our course website in Canvas.**

**Doing well in the course: Here are a few suggestions for doing well in the course. There are no guarantees but not doing them will almost certainly lower your grade.**

1. Regular attendance: ATTEND CLASS. You need to participate in order to understand the material. Most of the topics (except possibly the statistics and probability) will be new, never before seen, material. Miss a class or a portion of a class? Use your team members or study group to get the notes and announcements. You are still responsible for all announcements and knowing what was completed in class.
2. Do the assignment that was announced in the previous class: This will be announced either at the beginning or end of class. Completing these assignments in a timely manner and not procrastinating is one of the single most important things you can do to succeed in this course.
3. Do NOT focus exclusively on the My Math Lab activities: My Math Lab will provide some practice on the basic skills learned in each section of the textbook. However, several skills are NOT TESTED or discussed in My Math Lab. If you only work the My Math Lab activities, you will miss several important ideas and concepts and not do well in the class.
4. Bring the course materials to class: This includes access to the e- textbook or the textbook or the associated textbook pages. Bring a calculator. Bring your course notebook. Bring a pencil and eraser.
5. During class time, become involved. Raise your hand, ask questions. Contribute to a team assignment.
6. Form and participate in a study group. Working in groups or finding another student to share your ideas with has been shown to improve learning. Also, the ability to work in teams or groups is a skill of paramount importance to employers and increases your marketability.
7. Finding a tutor for this course might be difficult. Many tutors assume they will know the topics because this is a one hundred level math course. However, many tutors are not familiar with these topics as they are not part of a standard algebra curriculum. Be aware of this when interviewing tutors.
8. From my experience, those students who routinely work through the textbook problems, complete the MML activities (at the 90% level or above), prepare for the next class, and actively participate in the class activities are most likely to succeed in the course. Students who procrastinate, do not complete the problems and, in general, show little or any interest in the material, will not succeed.

**Course Policies**

**Classroom Expectations:**

Please be courteous to your fellow classmates and to your instructor. There are several reasonable expectations I have specified here so you are aware of how your actions can impact others. Those students end up getting in the way of their own learning and also the learning of their classmates.

* Refrain from routinely coming in late or leaving early. Pack up your belongings only after the class has ended.
* Be engaged in the activities and discussions during class.
* Avoid talking when others are asking questions or talking. This is not respectful to the person speaking.
* Be mindful of your use of technology in the classroom. There is evidence that multitasking on a laptop lowers students’ grades by 10% and lowers the grades of peers that see a multitasking screen by 17%. That is more than one +/- grade. It is assumed that all devices will be turned off and put away unless they are currently being used for classwork.
* Turn off or silence your cell phones or other electronic devices before entering the classroom. Interruption of a ringing phone negatively impacts the class and, if happens during a quiz or exam, can impair performance of you as well as your classmates. Students should not be checking messages, texting, or surfing the web during class.
* Be prepared for class. Strong participation and involvement in the learning process will lead to greater understanding.

**Teamwork:**

Working with other students is an incredibly effective and efficient strategy for learning the material. Furthermore, it is also an important career skill that will serve you well after college. Teams will generally be selected by the instructor. Your team will need to establish ground rules about the following issues:

* Roles and responsibilities (who is the team leader or team note-taker). Each role can be rotated.
* How the work will be divided.

Teams will consist of between two and four students. All team members will receive the same grade on an activity or worksheet. Problems or concerns about a team member can be discussed with me.

## **Academic Integrity**

Please familiarize yourself with UD policies regarding academic dishonesty. To falsify the results of one's research, to steal the words or ideas of another, to cheat on an assignment, to re-submit the same assignment for different classes, or to allow or assist another to commit these acts corrupts the educational process.  Students are expected to do their own work and neither give nor receive unauthorized assistance. Complete details of the university's academic integrity policies and procedures can be found at <http://www1.udel.edu/studentconduct/policyref.html>  Office of Student Conduct, 218 Hullihen Hall, (302) 831-2117. E-mail: [student-conduct@udel.edu](mailto:student-conduct@udel.edu)

## **Harassment and Discrimination**

The University of Delaware works to promote an academic and work environment that is free from all forms of discrimination, including harassment. As a member of the community, your rights, resource and responsibilities are reflected in the non-discrimination and sexual misconduct policies.  Please familiarize yourself with these policies at <http://www.udel.edu/oei> . You can report any concerns to the University’s Office of Equity & Inclusion, at 305 Hullihen Hall, (302) 831-8063 or you can report anonymously through UD Police (302) 831-2222 or the EthicsPoint Compliance Hotline at <http://www1.udel.edu/compliance>. You can also report any violation of UD policy on harassment, discrimination, or abuse of any person at this site: <http://sites.udel.edu/sexualmisconduct/how-to-report/>

## **Faculty Statement on Disclosures of Instances of Sexual Misconduct**

If, at any time during this course, I happen to be made aware that a student may have been the victim of sexual misconduct (including sexual harassment, sexual violence, domestic/dating violence, or stalking), I am obligated to inform the university’s Title IX Coordinator. The university needs to know information about such incidents in order to offer resources to victims and to ensure a safe campus environment for everyone. The Title IX Coordinator will decide if the incident should be examined further. If such a situation is disclosed to me in class, in a paper assignment, or in office hours, I promise to protect your privacy--I will not disclose the incident to anyone but the Title IX Coordinator. For more information on Sexual Misconduct policies, where to get help, and how to reporting information, please refer to [www.udel.edu/sexualmisconduct](http://www.udel.edu/sexualmisconduct). At UD, we provide 24-hour crisis assistance and victim advocacy and counseling. Contact 302-831-1001, UD Helpline 24/7/365, to get in touch with a sexual offense support advocate.

For information on various places you can turn for help,more information on Sexual Misconduct policies, where to get help, and reporting information please refer to <http://www.udel.edu/sexualmisconduct>

## **Inclusion of Diverse Learning Needs**

Any student who thinks he/she may need an accommodation based on a disability should contact the Office of Disability Support Services (DSS) office as soon as possible. The DSS office is located at 240 Academy Street, Alison Hall Suite 130, Phone: 302-831-4643, fax: 302-831-3261, DSS Website (<http://www.udel.edu/DSS/>). You may contact DSS at dssoffice@udel.edu

## **Non-Discrimination**

The University of Delaware does not discriminate against any person on the basis of race, color, national origin, sex, gender identity or expression, sexual orientation, genetic information, marital status, disability, religion, age, veteran status or any other characteristic protected by applicable law in its employment, educational programs and activities, admissions policies, and scholarship and loan programs as required by Title IX of the Educational Amendments of 1972, the Americans with Disabilities Act of 1990, Section 504 of the Rehabilitation Act of 1973, Title VII of the Civil Rights Act of 1964, and other applicable statutes and University policies. The University of Delaware also prohibits unlawful harassment including sexual harassment and sexual violence.

For inquiries or complaints related to non-discrimination policies, please contact:

Director, Institutional Equity & Title IX Coordinator- Susan L. Groff, Ed.D. [groff@udel.edu](mailto:groff@udel.edu), 305 Hullihen Hall Newark, DE 19716 (302) 831-8063

For complaints related to Section 504 of the Rehabilitation Act of 1973 and/or the Americans with Disabilities Act, please contact: Director, Office of Disability Support Services, Anne L. Jannarone, M.Ed., Ed.S. - [ajannaro@udel.edu](mailto:ajannaro@udel.edu)

Alison Hall, Suite 130, Newark, DE 19716 (302) 831-4643 OR contact the U.S. Department of Education - Office for Civil Rights (<https://wdcrobcolp01.ed.gov/CFAPPS/OCR/contactus.cfm>)

***NOTICE:*** *The University of Delaware owns a non-exclusive right to faculty materials that will be given to you during the course. These materials include ideas and comments provided by the instructor during class; test questions; handouts and course materials; and other materials representing the copyright-protected intellectual property of the course instructor. You are prohibited from entering into relationships with web sites such as Course Hero, Notehall, or similar sites under which you agree, in exchange for the payment of a fee or salary, to post these materials online.*