**Math 105 – Section 001**

**Math in a Modern Society**

**Time: 9 – 9:50am MWF Location: Chavez 110**

**Course Policy - Fall 2019**

**Instructor:** Debra Wood **E-mail:** dlwood@math.arizona.edu

**Office:** Mathematics building room 508 **Phone:** 520 626 8263

**Office Hours**:

 Mon 1:15 pm – 2:30 pm in Mathematics building 508

 Tue 1:30 pm – 2:45pm in Mathematics building 508

 Wed 11:00am -11:45 am at Think Tank (Bear Down Gym)

 Fri 2:00 pm – 3:00 pm in Mathematics building 508

Or by appointment. (call, email or ask before class) See instructor’s website for more options.

**Required Material**:

Scientific Calculator or Graphing Calculator

Worksheet packet – Available in the UA Student Union Bookstore under Class Notes.

Textbook and on-line homework and grading system is integrated with Inclusive Access. The book is *Excursions in Modern Mathematics,* by Peter Tannenbaum the 9th edition. No need to purchase one.

**Inclusive Access information:**

Course materials:  Course materials are being delivered digitally via D2L through the Inclusive Access program.

Please access the material through D2L on the first day of class to make sure that there are no issues with delivery so any problems can be addressed quickly.

You automatically have access to the course materials FREE through September 8, 2019.

You **must** take action (even if you have not accessed the materials) to opt-out if you do not wish to pay for the materials, and choose to source the content independently. **The deadline to opt-out is September 8, 2019.**

If you do not opt-out and choose to retain your access, the cost of the digital course materials will appear on your September Bursars account.

Please refer to the Inclusive Access FAQs at <https://shop.arizona.edu/textbooks/Inclusive.asp>for additional information.

**Main Websites:**

[**https://d2l.arizona.edu/**](https://d2l.arizona.edu/)

[**http://math.arizona.edu/~dlwood/**](http://math.arizona.edu/~dlwood/)

[**http://math.arizona.edu/~math105/**](http://math.arizona.edu/~math105/)

**Catalog Course Description**

This course will examine how the mathematics learned in high school is applied to real life situations. Topics may include personal finance, statistics, elections, networks, and scheduling. Some of the applications may be how the site of the Olympic Games is chosen, how statistical data is collected, how statistics can be used to mislead the public, and one gets a loan approved when purchasing a house.

The course is designed for elementary education majors, fine arts majors, humanities majors, and those social and behavioral science majors whose further courses do not require College Algebra as a prerequisite. Examinations are proctored.

Math 105 is a prerequisite to UA Math 302a, but no other math courses.
Students who need to take SBS 200, PSY 230, or any other math course like Math 109C, 112, 111, etc. should NOT take Math 105.

**Course Structure**

This is a 3 credit hour course. Students will meet three days a week (50 minute classes).

**Course Prerequisites**

PPL1/PPLN 30+ or SAT I MSS 530+, or ACT Math 21+ or MCLG 40+. Test scores expire after 1 year. A few students may need to take Math 100 first.

**Course Objectives**

* To develop a certain level of mathematical literacy and understanding so they can make informed decisions in areas pertinent to the study of mathematics. To attain this goal we teach mathematical subjects that are relevant to everyday living.
* Apply mathematical concepts to management, social science and other real world situations.
* To incorporate writing into the curriculum. No one word answers. Students must state their justification when answering questions.
* To investigate a mock situation of purchasing a home, this includes closing cost and affordability.
* To see and understand different algorithms and methods. Algorithms and methods that produce the same outcome and others that produce different outcomes.
* To illustrate that math is supposed to make sense, be meaningful and be valuable.
* The connection between the mathematics presented and down-to-earth concrete real-life problems
* Use statistics to analyze data.
* To make charts to display data in Excel.

**Learning Outcomes**

 Upon completion of this course, students should be able to:

* Identify and use terminology for calculations in finance: percentages, investing money, financing loans and buying a house.
* Plan routes both in circuits and paths.
* With data, interpret different types of charts and calculate basic statistics on numerical data.
* Use preference schedules for finding winners. Understanding apportionment for seats in Congress.

**Communication with Students**

Announcements and important course information will be announced in class. They also may be sent out via official University email or listed in D2L. Grades will be posted in D2L and will be updated after each test or project has been scored. Hints for some of the homework problems can be found on D2L. Email or in the instructor’s office is the best way to contact the instructor. Calling the instructor to make an appointment is also acceptable. The responses time for an email sent to or from an instructor should be within 24 hours. It is the student’s responsibility to check for emails and announcements regularly, at least once between classes.

**UA Policies**: Links to the following UA policies are provided here:  <https://academicaffairs.arizona.edu/syllabus-policies>

* **Absence and Class Participation Policies**
* **Threatening Behavior Policy**
* **Accessibility and Accommodations Policy**
* **Code of Academic Integrity**
* **Nondiscrimination and Anti-Harassment Policy**
* **Subject to Change Statement**

It is the student’s responsibility to keep informed of any announcements, syllabus adjustments, or policy changes made during scheduled classes. There will be frequent in class activities and quizzes, which will be graded, and no make-up will be allowed for these items. If a student misses class, s/he is responsible for the material covered that day and getting the next homework assignment in on time. It is the student’s responsibility to keep track of all due dates for all assignments on Mymathlab and from class.

**Classroom Behavior Policy**

To foster a positive learning environment, students and instructors have a shared responsibility.  We want a safe, welcoming, and inclusive environment where all of us feel comfortable with each other and where we can challenge ourselves to succeed.  To that end, our focus is on the tasks at hand and not on extraneous activities (e.g., texting, chatting, reading a newspaper, making phone calls, web surfing, etc.).

The use of personal electronics such as laptops, iPads, and other such mobile devices is distracting to the other students and the instructor.  Their use can degrade the learning environment. Therefore, students are not permitted to use these devices during the class period unless deemed necessary by the instructor.

**MyMathLab** (part of Inclusive Access)

This course uses MyMathLab, which is an online educational system that contains an electronic version of the textbook, online homework, and additional help features. Since MyMathLab provides access to an electronic textbook, a printed book is not required. MyMathLab will be accessed through your D2L for this course, under Content. Instructions for accessing and logging in are found in D2L under Content.

**Assignment (125 points)**: (MyMathLab**,** Quizzes, Class Activities, Homework and Worksheets)

There will be several in-class activities and quizzes that will count towards your assignment grade. Assignments will be announced in class, and may include worksheets. A majority of the homework is assigned on MyMathLab. Due dates are provided in MyMathLab, with most MyMathLab assignments due by 11:59pm on the due date. It is the student’s responsibility to know the due dates for assignments. One or two assignments are posted after each class. These activities are designed to help students evaluate their learning. Procrastination or technical issues do not warrant an extension on due dates. The percentage posted in MyMathLab is not your actual MyMathLab grade. The total assignment points earned during the semester will be scaled to 125 points. Since no assignments will be dropped, there are a few opportunities to replace missing assignments.

**Project** (**75 points)**: It is an online “Test” through MyMathLab, based on the Finance section, “Buying a House.” Prior to completing online test, students will have to complete online homework to prepare for the “Test” (These are counted toward the assignment grade). The online test will be open for a period of about 7 days. Students will have one attempt in MML Test and must be completed in one session. The last day to submit the project is **Nov 19th**. One should start working on the homework **Nov 8th**. One should at least start after Test 3, **Nov 13th**. One should plan extra time for this project during the week of **Nov 10th**.

**In class Exams (400 points):** There will be 4 in class tests. The 50 minute exams will be worth 100 points. The tentative dates for the 4 tests are **Sep 30th , Oct 21st, Nov 13th, and Dec 6th.**  Please put these dates in your calendar.

##### Issues related to the grade received on the exam needs to be discussed, in the instructor’s office, within 1 week of the exam scores being posted. Study guides for the exams will be posted in MyMathLab. These are optional, but will help you to review and prepare for the exam.

**Final Exam (200 points):** The comprehensive Final Exam will be given on **Thursday Dec 19th** from 10:30–12:30 pm. Please put this date in your calendar immediately. Do not make plans to leave earlier than this.

Please note the following:

* University rules relating to final examinations and the University final exam schedule may be found at:

<https://registrar.arizona.edu/courses/final-examination-schedule-fall-2019>

**MISSED EXAMS**

Students are expected to be present for all exams. The student must contact the instructor or Math department PRIOR to the exam or ASAP to be eligible for a make-up. If a student misses an exam, s/he must contact the instructor to schedule a make-up at a mutually arranged time, ideally taken before the next class meeting. Failure to contact the instructor or to make arrangements, a grade of zero will be given. However, if 2 or more exams are missed a grade of zero will be assigned to each missed exam.

**Incomplete**

A grade of *Incomplete* will be given only at the instructor’s discretion, according to University Policy as described at  <https://www.registrar.arizona.edu/grades/incomplete-i-grade>

**Withdrawal**

A student may withdraw from the course with a deletion from record through **Sep 8, 2019**, using UAccess. A student may withdraw with a grade of "W" through **Nov 3, 2019**, using UAccess. After **Nov 3rd** students will need their dean’s signature and instructor’s signature on a Late Change Petition form and Change of Schedule Form.

**Grades:** The total number of points available from exams and homework is 800 points. Grades will be updated on D2L after each exam. The break down is given in the following Table A. Grades will be no lower than those set forth in the following Table B:

|  |  |
| --- | --- |
| Table A |  |
|  **Break down of Grades** | **Points** |
| Assignments  | 125 |
| In class exams  | 400 |
| Project |  75 |
| Final  | 200 |
|  |  |
| **Total possible points** | **800** |

|  |  |  |
| --- | --- | --- |
| Table B |  |  |
| 720 or more points  | 90% to 100% | A |
| 640 to 719 points  | 80% to 90% | B |
| 560 to 639 points  | 70% to 80% | C |
| 480 to 559 points  | 60% to 70% | D |
| 479 or less points  | 0% to 60% | E |

**Please note that neither exam scores nor final grades will be curved. No extra credit is offered to change an exam grade.**

**Subject to Change Statement**

The information contained in the course policies, other than the grade and absence policies, may be subject to change with reasonable advance notice, as deemed appropriate by the instructor.

**Information about Inclusive access and how to log into MyMathLab are found in D2L.**

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**It is the student’s responsibility to keep up with the due dates.** These activities are to help the students evaluate their learning. The assignments in Mymathlab are posted after the material has been covered in class. If you see an assignment posted, you should begin the assignment. **Do not wait until the due date to begin the assignment**. You should try to finish all assignments at least 24 hours before the deadline. This gives you time to receive help before it is actually due. For this course, there usually is at least one assignment between classes.

Tentative Schedule and Assignments

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  |  | Math 105 Fall 2019 | MML in MyMathLab |
|  |  |  |  | WS in worksheet packet |
|  |  |  |  |  |
| **Week**  | **Dates** | **SEC.** | **Lesson Number: Topic for the Day** | **Assignments for the week** |
| 1 | Aug 26-Sep 1 | Intro | Intro – Euler Circuits | MML: HW0, Intro, ch5a,b |
| 2 | Sep 2 -8 | Ch 5 |  Euler Circuits | MML: Ch 5 c,d,eWS: page 1  |
| 3 | Sep 9-15 | Ch 6 | Traveling Salesperson Problem | MML: Ch 6 a,b,cWS: page 5 |
| 4 | Sep 16- 22 | Ch 6 & 7 | Traveling Salesperson Problem, Trees | MML: Ch 6 d, Ch 7 a, bWS: page 7 & 8 |
| 5 | Sep 23-29 | Ch 7 & 8 | Trees, Digraphs | MML: Ch 7 c, d Ch 8WS: page 7, 8, 9 and 10 |
| 6 | Sep 30 - Oct 6 | Ch 8 & 14 |  Digraphs, Critical Path, Collecting Data, Test 1 | MML: CH 14a,bWS: page 14, 15 (Questionnaire) |
| 7 | Oct 7 - 13 | Ch 14 | Collecting Data  | MML: Ch 14 c, d, e Ch 15 aWS:  |
| 8 | Oct 14- 20 | Ch 14 & 15 | Collecting Data, Statistics | MML: Ch 15 b, cWS: page 20 |
| 9 | Oct 21-27 | Ch 10 | Test 2 and Finance Percentage, Simple interest | Excel AssignmentWS: page 25 (10.1)MML: Ch 10.1, 10.2 |
| 10 | Oct 28 - Nov 3 | Ch 10 | Credit Cards, Compound Interest, Bank Loans | MML: 10.2 cc, 10.3, 10.4 |
| 11 | Nov 4 - 10 | Ch 10 | Bank Loans. Buying a House | MML: Ch 10.4, Ch 10 types and formula, 10RMML: "Buying a House" Intro |
| 12 | Nov 11 - 17 | Ch 1 | Test 3 and Voting | WS: page 51 (example 10)MML: "Project" Practice, RUReady, "Test"MML: Ch 1a  |
| 13 | Nov 18 -24 | Ch 1Ch 2 | Voting - Finding a winnerWeighted Voting Systems (Power) | MML: Ch 1b, c,, Ch 2 a |
| 14 | Nov 25- Dec 1 | Ch 2 | Weighted Votes and Power | MML: Ch 2 b, c, dWS Questions from chapter 2 |
| 15 | Dec 2- 8 | Ch 4 | Apportionment, Test 4 | MML: Ch 4 aWS:  |
| 16 | Dec 9 - 11 | Ch 4 | Apportionment  | MML: Ch 4bWS: Huntington-Hill Method |
|   | **Dec 19** | **Final** | **Final 10:30am -12:30pm**  |   |

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