

**MAT 102 – A Survey of Mathematical Ideas
Spring 2014**

| Course ID | Room | Unit | Days | Start Time | End Time |
|-------------|------|------|------|------------|----------|
| MAT 102 - 1 | A206 | 4 | T,TR | 01:30 PM | 03:20 PM |

INSTRUCTOR: Helen Shen

PHONE: 530-541-4660, Extension 364

E-MAIL: shen@ltcc.edu

OFFICE HOURS: Room A204
Mon. & Wed. 10:40 – 11:00 AM & 12:40 – 1:30 PM
Tue. & Thurs. 12:30 – 1:30 PM
Fri. 10:40 – 11:00 AM & 12:40 – 1:00 PM

REQUIRED: WebAssign Access Code
Scientific calculator with Stats capabilities

You are expected to read all examples on the textbook or the e-book for those sections covered in the class. It will be noted if the examples can be skipped.

TEXTBOOK (OPTIONAL): *Mathematics, A Practical Odyssey*, 7th ed., by Johnson/Mowry

REQUIRED SOFTWARE LICENSE: WebAssign is required for this course and a software license is required. You must have a valid e-mail address to use the on-line curriculum. Students have *two choices*:

- 1) The *first choice* is to purchase the physical textbook with the software license/access code either from the bookstore or online at www.cengagebrain.com (ISBN: 9781111650056). Note: If you purchase a used textbook, it may not have a valid course access code. Be VERY careful when acquiring the text.
- 2) The *second choice* is to purchase the WebAssign license/access code alone either from the bookstore or online at www.cengagebrain.com (ISBN: 0538738103). Once on the site, just search for the ISBN and add to cart. The license gives you access to the textbook online. This is a more economical choice, but is only recommended to students who have online access and feel comfortable reading a computer screen instead of a traditional book.

WebAssign

Course website: www.webassign.net

Our Course Id: **ltcc 4839 6433**

COUSE DESCRIPTION: This course provides a survey of a variety of branches of mathematics including inductive and deductive reasoning, business and finance math, an introduction to right triangle trigonometry, exponential growth and decay, probability and statistics.

PREREQUITE: A grade of C or better in MAT 154A or MAT 154AA or an equivalent course, or a satisfactory score on the Mathematics Assessment Test.

CALCULATOR: You will need a scientific calculator with Stats capabilities for this course. The TI-30X IIS is one such calculator that is inexpensive. Or you can rent one from the library, TI-84, \$5 per quarter. In this class, I will only demonstrate TI-30X, TI-84, or TI-89 calculators.

TUTORING: Tutoring is available in the Math Success Center (MSC) in Room 201. Students will earn 0.5 point toward the total grade for every 10 hours in MSC or DRC. However, if any student misses more than two classes, no lab credit will be granted.

STUDENT LEARNING OUTCOMES:

1. Apply combinatorics and the rules of probability to real life situations.
2. Analyze statistical information and the 'Normal' distribution to make conclusions based on data.
3. Incorporate the mathematics of finance to be consumer-wise.
4. Utilize trigonometric formulas to solve problems involving triangles.
5. Develop exponential growth and decay models.

GRADING POLICY:

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| Method of Student Evaluation | |
| Homework (23 sections at 4 points each) | 92 points |
| Quizzes* (Quiz#1 & Quiz#1 at 30 points each) | 60 points |
| Exams* (Three at 100 points each) | 300 points |
| Final (Covers entire course content) | 200 points |

Your letter grade will be based on your percentage of the 695 possible points.

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| A | 90-100% |
| B | 80-89% |
| C | 70-79% |
| D | 60-69% |
| F | less than 60% |

And, **your final needs to be above 100 points to pass the class.**

I will drop a student from the class if the student misses four classes or more and is unable to keep up with the learning.

CHECKING YOUR GRADE ONLINE: Your grade will be available online at LTCC Passport Gradebook

HOMEWORK: Homework will be done online using WebAssign. Due dates are listed for you when you go on line to do the assignments. Feel free to consult a fellow

classmate, a tutor, your instructor, or anyone else for assistance on the homework. In addition, the computer will give you help with any problem, show you an example of a similar problem, and in some cases show you a video of someone teaching how to do that type of problem. You can work on homework after the due date but there are penalties for being late (see the make-up policy below). **If you don't have the internet connection at home, you can print them out in school at Math Lab, TLC, or D-wing Lab, work the problem on the papers, and enter the answers in school.**

EXAM POLICY:

Grading will be based on progress towards the final answer, and the demonstration of understanding of the concept that is being tested. The more you show me with steps and detail, the better your chances for partial credit. You provide me the communication and detail in your answers; and I will give you the best grade I can based on that communication and answer. You can use one page of notes, front and back, for quizzes, exams and the final. **0 points will be given if the cell phone is used during the exam time. 0 points will be given if the calculator is shared during the exam time.**

MAKE-UP POLICY:

For **Quizzes, Exams and the Final**, make-up is possible if the instructor is **contacted in advance and the absence is excused**; there is a 10% penalty if the absence is not excused. The make-up test needs to be taken before the next class. **Homework** will be accepted late up to one week after it is assigned for half credit; the online homework will be closed after the due date, and I will **reopen it next day morning** for another week for the late homework. You have 3 tries for the online quiz#3, the highest score will be used, and there is no make-up for the online quiz. **If you take the make-up test at TLC, you need to make an appointment at TLC 24 hours ahead by going to TLC, call (530)541-4660 x 740, or e-mail TLCProctors@ltcc.edu.**

COMMUNICATION POLICY:

You can communicate with me either by coming to class or office hours, sending an e-mail, or calling on the phone. I will respond to your e-mails in a timely manner, and I will do my best to return your calls (you need to make sure to leave your number clearly). If you miss the class, it is your responsibility to pick up the class handouts or obtain the information either from your classmates or from me during the office hours.

- I have students work together to help each other. Please feel free to ask me directly if you like to work with me one-on-one.
- **Please come see me if you do not understand my policies.**
- Since English is my secondary language, please **be sure to ask** me if you have any difficulty to understand math due to my accent. I will be happy to clarify.

LEARNING DISABILITIES:

If you have a learning disability, be sure to discuss your special needs with me during the first week of class. Learning disabilities will be accommodated.

HOW TO SUCCEED IN A MATH CLASS:

- 1) Read your textbook before class.
- 2) Choose to attend all class periods and be on time.
- 3) Exchange names and phone number with classmates.
- 4) Learn from your mistakes and be patient with yourself.

- 5) Don't be afraid of asking questions.
- 6) Know how to get help if you need it.
- 7) Organize your class materials.
- 8) Do your homework.
- 9) Check your work.
- 10) Hand in assignments on time.

ACADEMIC DISHONESTY (CHEATING): Academic dishonesty of any form will not be tolerated. Students caught cheating on exams or quizzes will receive a score of zero on the assignment for the first offense and a course grade of F for the second offense.

Cheating will be defined as but not limited to: (1) using any method to copy another's work on an exam, quiz, or final (2) directly copying another student's homework assignment (3) using any method other than your own honest efforts to complete exams, quizzes, the final, or homework assignments.

The following activities are NOT cheating: (1) collaborating with other students to complete homework assignments (2) working with math tutors or academic coaches to complete homework assignments (3) working with other students to study for exams, quizzes or the final.

FINANCIAL ASSISTANCE: If you need help paying for your books or other expenses, call our financial aid officer, America Ramirez, at 541-4660 x236, email her at Ramirez@ltcc.edu, or drop by A100.

WHERE TO FIND A COMPUTER ON CAMPUS: Computers are available for your use in the following locations on campus:

- Tutoring & Learning Center (TLC)* open Mon – Thurs 10 – 6, Fri 10 – 2.
 - Math Success Center (MSC) * open Mon – Thurs 9 – 6, Fri 10 – 2
 - Open Labs in the D-wing which have available times posted by the door of each lab.
- * Both the TLC and the MSC are in room A201.

Tentative Lecture Schedule for Math 102A

Be sure to use class time, office hours, and the MSC to get all of your questions answered.

In response to students' requests, I am experimenting on shorter homework assignments. However, if tests show the lower-than-normal learning, I'm reserving the option to lengthen the assignments in order for students to succeed.

(Appendix E homework is on paper, and the rest of homework is online.)

| Date | Section | Topic | Homework |
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| T 4/8 | Appendix E 8.1 | Introductions, Discussion of Syllabus Dimensional Analysis Perimeter and Area (Use $\pi = 3.14159$ for HW) | #3,6,7,11,13,14,15,16 on eBook, page A-27 (on paper) |
| TR 4/10 | 8.5 | Right Triangle Trigonometry | Homework on sections Appendix E, 8.1, & 8.5 is due Tuesday, 4/15, at 1:30pm |

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| T 4/15 | 5.1 5.2 | Simple Interest Compound Interest | |
| TR 4/17 | 5.3 | Annuities | Homework on Sections 5.1-5.3 is due Tuesday, 4/22, at 1:30pm |
| T 4/22 | 5.4 | Amortized Loans | |
| TR 4/24 | 10.0A 10.0B | Review of Exponentials and Logarithms Review of Properties of Logarithms | Homework on Sections 5.4 is due Tuesday, 4/29, at 1:30pm |
| T 4/29 | 10.0B | Quiz #1 (Appendix E, Sections 8.1, 8.5, & 5.1–5.4) (50 min) Finish section 10.B | |
| TR 5/1 | 10.1 10.2 | Exponential Growth Exponential Decay | Homework on Sections 10.0A, 10.0B & 10.1-10.2 is due Tuesday, 5/6, at 1:30pm |
| T 5/6 | 2.1 | Sets and Set Operations Review for Exam #1 | Homework on Sections 2.1 is due Tuesday, 5/13, at 1:30pm |
| TR 5/8 | | Exam #1 (Appendix E, Sections 8.1, 8.5, 5.1–5.4, & 10.0-10.2) | |
| T 5/13 | 2.3 2.4 | Introduction to Combinatorics Permutation and Combinations | |
| TR 5/15 | 3.1 3.2 3.3 | History of Probability (Read) Basic Terms of Probability Basic Rules of Probability | Homework on Sections 2.3-2.4 & 3.2-3.3 is due Tuesday, 5/20, at 1:30pm |
| T 5/20 | 3.4 3.5 | Combinatorics and Probability Expected Value | Homework on Sections 3.4 is due Thursday, 5/22, at 1:30pm Homework on Sections 3.5 is due Tuesday, 5/27, at 1:30pm |
| TR 5/22 | 3.6 | Quiz #2 (Sections 2.1, 2.3-2.4, & 3.2-3.4) (50 min) Conditional Probability | |
| T 5/27 | 3.6 | Finish section 3.6 Review for Exam #2 | Homework on Sections 3.6 is due Tuesday, 6/3, at 1:30pm |
| TR 5/29 | 4.1 4.2 | Population, Sample, and Data Measures of Central Tendency | |
| T 6/3 | | Exam #2 (Sections 2.1, 2.3-2.4, & 3.2-3.6) | |
| TR 6/5 | 4.3 | Measures of Dispersion | Homework on Sections 4.1-4.3 is due Tuesday, 6/10, at 1:30pm |
| T 6/10 | 4.4 | The Normal Distribution | |

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| TR 6/12 | 4.4 | Finish Section 4.4 | Homework on Sections 4.4 is due Tuesday, 6/17, at 1:30pm |
| T 6/17 | | Review for Exam #3 Review Handouts for Final Exam | |
| TR 6/19 | | Exam #3 (Sections 4.1-4.4) | |
| TR 6/26 | | Cumulative Final Exam (1:00-2:50pm) | |

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| Appendix E | #3,6,7,11,13,14,15,16 |
| 8.1 | #1,5,7,10,11,19,23,34 |
| 8.5 | #1,6,9,21,27,30,33 |
| 5.1 | #3,7,11,18,23,32,38,42 |
| 5.2 | #6,8,13,20,25,33,35,38,41 |
| 5.3 | #1,5,8,16,35,37 |
| 5.4 | #5,10,12,16,22 |
| 10.0A | #1,4,5,9,13,20,26,27,36,41,47 |
| 10.0B | #2,4,6,8,9,12,14,16,18,20,22,24,26,28,30,32,34,39,43,48,49 |
| 10.1 | #13,23,28 |
| 10.2 | #1,7,20,27 |
| 2.1 | #2,7,12,14,15,17,23,27 |
| 2.3 | #2,5,16,22,23,33,44 |
| 2.4 | #1,15,18,20,22,25,26,28,29,33 |
| 3.2 | # 5,8,11,14,20,23,45,47,63,66,70,72 |
| 3.3 | #3,10,13,27,30,40,48 |
| 3.4 | #5,8,17, 23, 25, 29,30 |
| 3.5 | #14,19,36,38,39 |
| 3.6 | #3,9,16,24,41,43,48,58,60,64 |
| 4.1 | #2,8,16,17 |
| 4.2 | #2,11,17,22,25,28 |
| 4.3 | #4,7,13,16,18,22 |
| 4.4 | #4,5,6,8,10,11,13,17,20,22,24,26,28 |