

MTH 253 – Series Calculus and Linear Algebra

Fall 2016

Sec 01 CRN 20191 M-W, F 9-9:50 AM

WOH 128

Instructor: Kylene Tyler **Office:** WOH 129
Email: tylerk@linnbenton.edu **Office Hours:** T 10-10:50 am
other times by appt.

Course Materials: Calculus: Early Transcendentals, 2nd edition by Briggs, Cochran, and Gillett
Matrix and Power Series Methods, 5th edition by Lee and Scarborough

Course Grade: Grades in this class are determined as follows:

| | |
|----------------------|-----|
| 2 tests | 40% |
| Final | 30% |
| Homework | 20% |
| In-Class Assignments | 10% |

Grades will be assigned as outlined in the scale below:

| | |
|---|---------|
| A | 90-100% |
| B | 80-89% |
| C | 70-79% |
| D | 60-69% |
| F | 0-59% |

This course is the third course in the calculus sequence for students majoring in the fields of mathematics, science or engineering. Topics we will cover will include sequences and series of real and complex functions, matrix algebra, linear dependence and independence, eigenvalues and eigenvectors.

Prerequisites: 1. The ability to find the determinant and inverse of a matrix without the use of a calculator
2. A grade of “C” or better in MTH 252 – Integral Calculus

Homework: I assign homework out of the book.

Each assignment will be handed in (by the end of class) two class days after it is covered, to have a chance of receiving full credit (7 points). If an assignment is handed in one day late you can receive at most 5 points for that assignment. If an assignment is handed in more than one day late you will receive no points. The assignments that are handed in on time will be graded in the following way:

I will check some of the questions in each assignment. Note: In chapters 8 and 9, the questions that will be graded are the even numbered problems. If they are all correct, you will receive 7 points; surprisingly the more you get wrong, the fewer points you will earn, but you will receive 1 point for just handing it in on time. I will throw out at least 2 of your worst assignments.

ASSIGNMENTS

| <u>Section</u> | <u>Assignment</u> |
|----------------|---|
| 8.1 | 1 - 76 by 5's |
| 8.2 | 1 - 31 by 3's, 45, 50, 55, 64, 67, 78 |
| 8.3 | 1 - 61 by 5's |
| 8.4 | 1 - 56 by 5's |
| 8.5 | 1 - 16 by 3's, 27 - 42 by 3's, 49, 52, 55, 69 |
| 8.6 | 1 - 56 by 5's |
| 9.1 | 1 - 19 by 3's, 31, 32, 35, 42a |
| 9.2 | 1 - 56 by 5's, 64 |
| 9.3 | 1 - 34 by 3's, not 19 |
| 9.4 | 1 - 31 by 3's (not 4), 37, 40, 55, 56, 59 |
| Lesson 1 | 1 - 13 by 3's, 14, 16, 17, 26 - 36 all, 39 |
| Lesson 18 | 1, 2, 4, 6, 7, 9, 10, 13, 14, 15, 16, 18, 19, 24 |
| Lesson 2 | 1(verify), 3, 4, 9, 10, 11, 12 |
| Lesson 3 | 1, 4, 7, 10, 11, 13, 14, 16, 17, 18, 20, 22, 23, 25 |
| Lesson 4 | 1, 2, 4, 5, 6, 8, 9, 10, 12, 13, 15, 16, 18, 21 |
| Lesson 5 | 1 - 6 all, 8 |
| Lesson 6 | 1(a, b, d, e, f), 2(a, b, e, g, h, k), 6, 7, 8 |
| Lesson 7 | 1, 2, 3, 7, 8, 9, 12, 13, 15, 18 |

In-Class Assignments: There will be in-class assignments (due at the end of class) made up of problems that will allow you to practice what we're learning in class. I strongly encourage you to work in groups for the in-class assignments, though everyone should turn in their own work.

Tests: All tests (final exam included) will be given in the classroom. All tests will have a time limit. Tests must be taken on the scheduled day and if you miss a test you will get a score of zero. The tentative test dates are listed on the calendar. All exams are closed book. On some exams, a formula sheet may be used.

LBCC's Nondiscrimination Policy: LBCC prohibits unlawful discrimination based on race, color, religion, ethnicity, use of native language, national origin,

sex, sexual orientation, marital status, disability, veteran status, age, or any other status protected under applicable federal, state, or local laws.

Special circumstances: You should meet with your instructor during the first week of class if

- You have a documented disability and need accommodations,
- Your instructor needs to know medical information about you, or
- You need special arrangements in the event of an emergency.

If you have not accessed services and think you may need them, please contact Disability Services, 917-4789.

Expectations: I expect that my students will be involved in class. This includes being present, asking questions and participating in discussions. You should come to class prepared (this means you should bring your paper, pencils, calculator, etc. as well as have your homework with you). I expect you to be respectful of everyone in the class, in word as well as behavior. Along these lines, I ask that you turn off and put away your cell phone during class so as to avoid causing a distraction.

Academic Honesty: I assume that you are ethical and honest. However, if there is an incident of academic dishonesty, you will receive a score of zero for that test/assignment and the incident will be reported to the college administration for possible further disciplinary action. If there is a second offense, you will receive a grade of F for the course and the incident will be reported to the college administration with a recommendation for disciplinary action.

Suggestions:

Use available resources. If you have questions, **PLEASE** come see me or e-mail me. Aside from that, you can go to the Learning Center/Learning Annex for math help. Here is the information about that straight from their website:

MATH HELP

In Albany: Math help is in WH-226 (enter through WH-200, above the Library).

| | | |
|------------------------|----------------|-----------------|
| Monday-Thursday | Friday | Saturday |
| 7:30 am - 9 pm | 7:30 am – 5 pm | 11 am – 4 pm |

In Corvallis: Math help is in BC-232.

| | |
|------------------------|---------------|
| Monday-Thursday | Friday |
| 1 pm – 8 pm | CLOSED |

And then! You are also eligible for 3 hours a week of **FREE TUTORING** services

from the Tutoring Center. You must sign up in advance, in the Learning Center, for tutoring. For more information about that, check out this website:

<http://www.linnbenton.edu/go/tutoring>

So when all is said and done, you should know how to:

1. Determine whether a sequence or series converges or diverges.
2. Calculate exactly (if possible) or approximate the sum of a convergent series.
3. Understand and utilize power series to perform mathematical calculations.
4. Apply vector and matrix operations to systems of equations and transformation matrices.