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Mathematical Methods in Chemistry
Fall, 2021

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Instructor: T.-S. Yang, Ph.D.
Department of Chemistry and Biochemistry, Rm 410
Office hour: Fri. 10:10 ~ noon
Main Text: R. G. Mortimer: Mathematics for Physical Chemistry 4th Ed., 2013.
References:
1. M. Levitus: Mathematical Methods in Chemistry, Libretexts, 2020
2. E. Kreyszig: Advanced Engineering Mathematics 10th Ed., 2018

Course Outline:
1. Numbers and Units
2. Mathematical Functions
3. Symbolic Mathematics: Algebra
4. Vector Algebra
5. Solutions of Algebraic Equations
6. Differential Calculus
7. Integral Calculus
8. Multivariable Differential Calculus
9. Multivariable Integral Calculus
10. Mathematical Series
11. Integral Transforms
12. Differential Equations
13. Operators, Matrices, Group Theory
14. Solutions of Algebraic Equations with Multiple Unknowns
15. Probability and Statistics
16. Data Reduction

Grading will be based on quizzes 20%, midterm exam (11/12 Fri) 40%, and final exam (1/12 Wed) 40%.