HW, Quizzes and exams. You should turn in homework before 11:59pm on Mondays.

Quizzes will take place on Tuesdays outside of the lecture time.

Before exams I will give you samples of what you should expect.

Lecture and office hours. Lectures from now on will life on zoom. Office hours will be on Thursday 4-5pm.

W1.

- 8/27 Introduction, overview.

W2.

- 9/1 L1. Series, basic definitions, convergence, divergence, absolute and conditional convergence. Divergence test. Tests for convergence. (1.4-1.9)
- 9/3 L2. Power series, manipulation, radius and interval of convergence, Taylor series. (1.10-1.13F)
- HW Due 9/7, pg 19: 1,3,5,6,8,14,18; pg 41: 8,9,10,21,22,23.

W3.

- 9/8 L3. Complex numbers, algebraic manipulations with complex numbers. Polar form of a complex number. (2.2-2.5)
- 9/10 L4. Complex valued series. Complex valued power series. Functions of complex variable. Euler's formula. (2.6-2.9) Trigonometric functions of complex variable. (2.11-2.16)
- HW Due 9/14, pg 51: 12,17; pg 52: 21; pg 55: 57,59; pg 57: 5,10; pg 59: 5,9,12; pg 63: 17,27; pg 67:23, 24,31; pg 69:17; pg 71:19,32,34; pg 76:2,13,15;

W4.

- 9/15 L5. Functions in two variables. (4.1) Power series in two variables, Taylor power series (4.2). Approximation using differentials (4.5, 4.7)
- 9/17 L6. Differentiation of functions of two variables. (4.3, 4.5) Implicit differentiation. (4.6) Chain rule. (4.7)
- HW Due 9/21, pg 192: 3, 5, ; pg198: 7,15; pg 203: 3, 7, 9; pg 210: 3, 5, 10, 17, 27.

W5.

- 9/22 L7. Application to maximum and minimum problems. (4.8) Maximum and minimum problems with constraints, Lagrange multipliers. (4.9)
- 9/24 L8. Endpoint or Boundary Point Problems. (4.10) Change of Variables. (4.11) Differentiation of Integrals, Leibniz Rule. (4.12)
- HW Due 9/28, pg 213: 9; pg 222: 6,11; pg 228:11, pg 232:6; pg 237:15.

W6.

- 9/29 L9. Review
- 10/1 **Midterm 1**.
- No HW

W7.

- 10/6 L10. Line integrals (6.8). Green's theorem in the plane (6.9).
- 10/8 L11. Analytic functions (14.2). Contour integrals (14.3). Laurent series (14.4).
- HW Due 10/12, pg 306: 2,3; pg.313: 2,6; pg 672: 5,9,16,36,39,42; pg 673: 46, 58, 60; pg. 677 :12, 14, 18, 22,23; pg. 681: 7, 9,11;

W8.

- 10/13 L12.The residue theorem, methods of finding residues (14.5).
- 10/15 L13. Methods of finding residues (14.5).
- HW Due 10/19, pg. 683:1; pg 686:4,8,9,15,17,23,24,26,31,35;

W9.

- 10/20 L14. Evaluation of definite integrals using the residue theorem (14.7).
- 10/22 L15. Evaluation of definite integrals using the residue theorem (14.7).
- HW Due 10/26, pg.699: 5,6,9,10,19,28,29,35,37; pg 701: 43,49,52,53;

W10.

- 10/27 Review
- 10/29 **Midterm 2**
- HW No HW

W11.

- 11/3 L16. Residues at infinity (14.8).
- 11/5 L16. Mappings (14.9). Applications of conformal mappings (14.10).
- HW Due 11/9, pg 704: 3,5,12,13,14,15; pg 710: 3,5,8; pg 716: 4, 7,9,11.

W12.

- 11/10 L17. Simple harmonic motion and wave motion: periodic functions (7.2). Average value of a function (7.4).
- 11/12 L18. Fourier series and Fourier coefficients (7.5).
- HW Due 11/16, pg 343:3,7,10; pg: 347 2,6; pg 349: 3, 13,14, pg 355: 7, 11; pg.

W13.

- 11/17 L19. Dirichlet conditions (7.6). Complex form of Fourier series (7.7). Other intervals (7.8). Even and odd functions (7.9).
- 11/19 L20. An application to sound (7.10). Fourier transformation (7.12).
- HW Due 11/23 358:15; pg 363: 11,12,13; pg. 370: 10,12. pg 377 :3,4,5,9; pg 384: 3,9,17,24;

W14.

- 11/24 L21. Second order differential equations (8.6). The Laplace transform (8.8).Solution of Differential Equations by Laplace Transforms (8.9).
- 11/26 Thanksgiving.
- HW Due 11/31 pg.438: 2,8,11; pg.443: 8,10,12,14,16,20.

W15.

- 12/1 L22. Review, consolidation.
- 12/3 L23. Review, consolidation.