

Mathematics of Physics and Engineering II

MATH 445

Text: Advanced Engineering Mathematics, 10th Ed.

This is a course that introduces topics that are useful in various Engineering and Physics courses as well as Applied Mathematics courses.

Topics will include Vector field theory: theorems of Gauss, Green and Stokes; Fourier series and integrals; complex variables; linear partial differential equations; series solutions of ordinary differential equations.

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Teaching Assistant: Joseph Timmer

Office Hours: Math Center-KAP 263, See “Course Web page” above.

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|-----------------|-----------|-------------|--------------|
| Midterm Exam 1: | Wednesday | October 3 | |
| Midterm Exam 2: | Wednesday | November 7 | |
| Final | Friday | December 14 | 11:00 – 1:00 |

Last day to drop without “W”:

September 14

Last day to drop with “W”:

November 16

GRADING POLICY

2 Midterm exams – 40% of grade

10 best quiz grades – 25%

Final - 35%

| Class | | Schedule |
|--------------|-----------------|-------------------------------------|
| Week | Starting | Sections covered |
| 1 | August 27 | Chap.13, Sec.1, 2 |
| 2 | September 3 | (Labor Day) Chap. 13, Sec. 3-7 |
| 3 | September 10 | Chap. 11, Sec. 1, 2 |
| 4 | September 17 | Chap. 11, Sec. 4, 7, 9 |
| 5 | September 24 | Chap. 5, Sec. 1-2 |
| 6 | October 1 | Chap. 5, Sec. 3, 4 (Midterm) |
| 7 | October 8 | Chap.12, Sec. 1- 4 |
| 8 | October 15 | Chap. 12, Sec. 5 – 7 |
| 9 | October 22 | Chap. 12, Sec. 9, 10 |
| 10 | October 29 | Chap. 11, Sec. 5; Chap. 12, Sec. 11 |
| 11 | November 5 | Chap. 10, Sec. 1,2,4,5; (Midterm) |
| 12 | November 12 | Chap. 10, Sec. 6 – 9 |
| 13 | November 19 | Chapt 14, Sec. 1 -4 |
| 14 | November 26 | Chap. 16, Sec. 1 -4 |
| 15 | December 3 | Review |

Problem Assignments

| SEC | PROBLEMS | SEC | PROBLEMS | SEC | PROBLEMS |
|------|-------------------|-------|----------------|------|---------------------|
| 13.1 | 2,9,19 | 11.5 | 6,7,9,13 | 10.1 | 7, 9 |
| 13.2 | 5,11,15,23,30XCR* | 11.6 | None | 10.2 | 3, 7 |
| 13.3 | 1,3,7,11,19 | 11.7 | 3, 11 | 10.4 | 3, 7, 9 |
| 13.4 | 3,7,9,17,21,29 | 11.8 | None | 10.5 | 3, 7, 15, 19 |
| 13.5 | 9,15,19 | 11.9 | 5,9,11 | 10.6 | 1, 3, 7, 9, 13 |
| 13.6 | 5,19 | 11.10 | none | 10.7 | 5, 9, 11, 13 |
| 13.7 | 7,15,19,23,27 | 12.1 | 3,5,9,11,15 | 10.8 | 12 a, b, c, d |
| 11.1 | 1,3,7,15,21 | 12.2 | none | 10.9 | 5, 7, 13, 15 |
| 11.2 | 9,11,17,25,27 | 12.3 | 7, 9,11 | 14.1 | 3,7,13,19,25,29 |
| 11.3 | None | 12.4 | 3 | 14.2 | 9,11,15,17,21,23,29 |
| 11.4 | 11,13,15 | 12.5 | none | 14.3 | 11,13,19 |
| 5.1 | 11, 13 | 12.6 | 11,15 | 14.4 | 1,9 |
| 5.2 | 1,11 | 12.7 | 3, 5 | 16.1 | 1,5,7,9 |
| 5.3 | 3,5,9 | 12.8 | none | 16.2 | 1,7,15,17 |
| 5.4 | 3,5,7,9 | 12.9 | 5,7 | 16.3 | 3,5,15,21,25 |
| 5.5 | 1 | 12.10 | 2,3,5,7, 21XCR | 16.4 | 1,9,13,23 |
| | | 12.11 | 8,9,10,13,17 | | |

* XCR=Hand in for extra credit. Work as a team if you wish.

The homework is automatically assigned and should be attempted as soon as the pertinent section is covered in the lecture. If you have questions regarding the homework you are encouraged to consult the Instructor.

The homework will not be collected.