

Mathematical Analysis for Graduate Students

ENGR 520

Course Presentation

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*Department of Electrical Engineering & Computer Science
The Catholic University of America, Spring 2014*

Mathematical Analysis for Graduate Students

ENGR 520

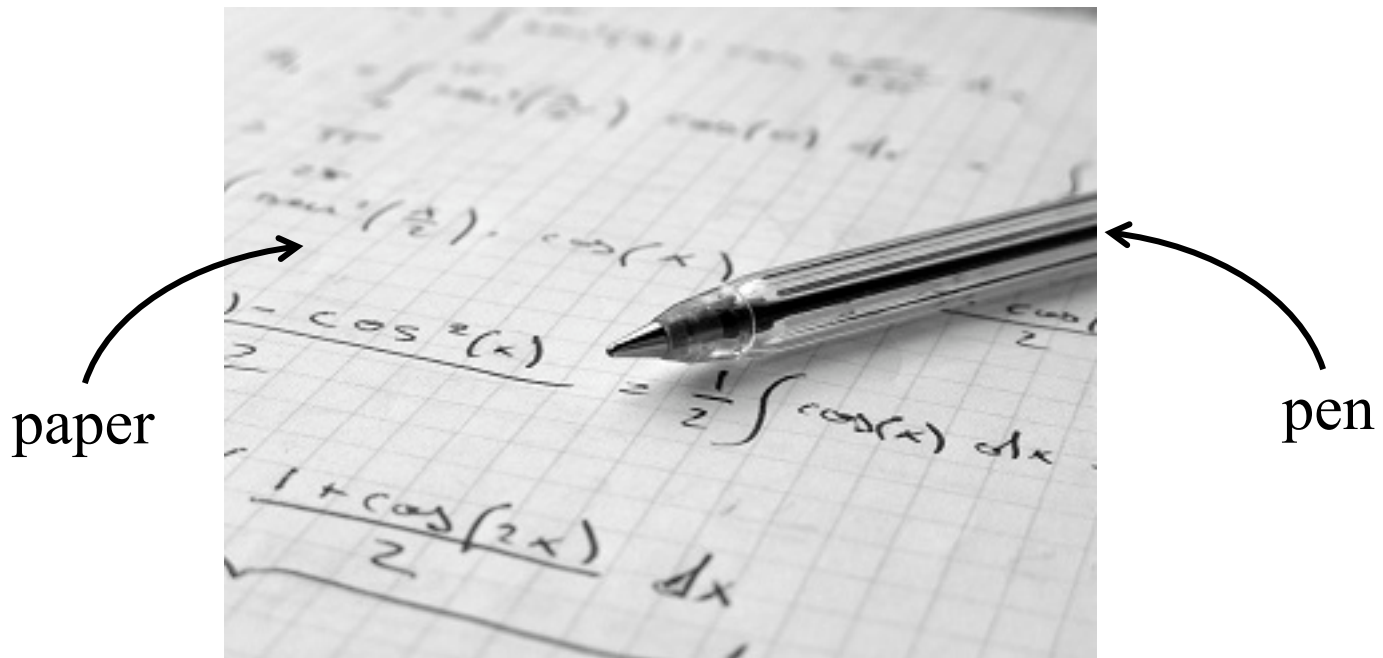
0. Course Presentation

- a. Description
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- c. Syllabus
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0.a Description

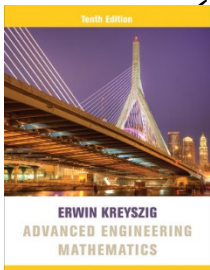
➤ Objectives

- ✓ provide an introduction to mathematical methods needed in ENGR
- ✓ understand the concepts for solving differential equations (DEs) & integrals (as opposed to extricating an answer from a math software package)



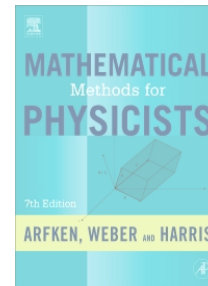
0.b Textbooks

➤ Required



Kreyszig, E. (2011)
Advanced Engineering Mathematics (10th Ed.),
Wiley (ISBN: 978-0470458365).

➤ Optional



Arfken, G.B., Weber, H.J. & Harris, F.E. (2012)
Mathematical Methods for Physicists (7th Ed.): A Comprehensive Guide,
Academic Press
(ISBN: 978-0123846549).

0.c Syllabus

(Tentative)

1. **First-Order Ordinary DEs (ODEs)**
2. **Second-Order Linear ODEs**
3. **Linear Partial DEs (PDEs)**
4. **Power-Series Solutions**
5. **Real Definite Integrals**
6. **Complex Analysis**
7. **Complex Integration**
8. **Complex Series**
9. **Fourier Series**
10. **Fourier Transform**
11. **Laplace Transform**

0.d Organization

➤ Course admin

- ✓ **Units:** 3.0
- ✓ **Class hours:** Monday & Wednesday, 1:00 – 4:00,
Gowan 408
- ✓ **Call number:** #2169

➤ Course websites

- ✓ **Syllabus & schedule:** <http://doursat.free.fr/engr520.html>
- ✓ **Documents & assignments:** <http://blackboard.cua.edu>

0.d Organization

➤ Assignments

- ✓ reading assignments: pages from the book
- ✓ homework assignments \approx every class, due at the next class
- ✓ all assignments are required; late assignments get an F
- ✓ **no** team projects: please work **individually**

➤ Exams

- ✓ 2 midterm exams (1h30 each)
- ✓ 1 final exam (2h30)

0.e Grading (Tentative)

➤ Grading policy

Homework	40%
Midterm 1	15%
Midterm 2	15%
Final exam	30%

➤ Grading scale

100 → 90	A-, A
89 → 80	B-, B, B+
79 → 70	C-, C, C+
69 → 60	D
59 → 0	F

!/ nonlinear rule: failure (< 60) in either the homework component or the exam component will result in failure in the course (i.e. you cannot compensate for one with the other)

0.f Schedule (Tentative)

➤ Schedule (on Web page)

- ✓ important dates:
 - exam 1 (tentative): Monday, June 2, in class
 - exam 2 (tentative): Monday, June 16, in class
 - *final exam: Wednesday, June 25*
- ✓ *check the schedule often* as it will be adjusted
- ✓ *check the Blackboard often* as course notes and assignments will be posted there
- ✓ as much as possible, important news between classes will be emailed to you, however *do not count on receiving emails!* you must check these two websites proactively