OAKLAND UNIVERSITY
COLLEGE OF ARTS AND SCIENCES
DEPARTMENT OF MATHEMATICS AND STATISTICS
STUDENT INFORMATION SHEET AND SYLLABUS

COURSE: **APM 5441, Mathematical Analysis for Engineers I, 4 Credits**

TERM: Winter 2018

Instructor	Office	Phone	Email	Section	Time	Room
Nghia Tran	347 MSC	248-370-4030	nttran@oakland.edu	012	5:30-7:17 MW	386 MSC

Attendance at every class is expected.

OFFICE HOURS: 12:15 – 1:15 pm on MF and 4:25-5:25 on W.

COURSE OVERVIEW: Laplace transforms; linear algebra; matrices, vectors, determinants, linear systems of equations, matrix eigenvalue problems; vector differential calculus; vector integral calculus, integral theorems; Fourier series, integrals and transforms. Required background includes courses in multivariable calculus, linear algebra and differential equations.

PREREQUISITES: A 2.0 or better in MTH 2554 (Multivariable Calculus), MTH 2556 or MTH 2775 (Linear Algebra), and APM 2555 (Introduction to Differential Equations with Matrix Algebra) or APM 257 (Introduction to Differential Equations). In particular, this course assumes knowledge of partial derivatives and multiple integrals, solution methods to first and second order ordinary differential equations, and basic matrix theory including determinants. You should review the prerequisite material immediately if it has been some time since you have taken these undergraduate courses. Prerequisites are strictly enforced, so that we can discuss the material in this course with the mathematical sophistication that it requires.

COURSE OBJECTIVES: The student should learn methods of solving certain differential equations, become familiar with mathematical models that lead to these types of differential equations, and master the necessary linear algebra to apply these methods and analyze solutions.

TEXT: Advanced Engineering Mathematics, 10th ed. by Erwin Kreyszig. Selected topics from Chapters 6-11 of the textbook will be covered.

HOMEWORK: Homework will be assigned on a regular basis but it will be not collected or graded. However, it is imperative to do the homework in order to do well on all exams.

EXAMS: There will be two midterm exams on **Wednesdays: Feb 07 and Mar 28**. These exams and the final examination (see below) are closed book. Each is worth 150 points. You may bring to each of the exams a one-sided page freely written, and a photocopy of the tables of transforms.

FINAL EXAM: The final examination is comprehensive and worth 200 points. It is scheduled for **Wednesday, April 25 at 7:00-10:00 p.m**. in the regular classroom. you may bring a two-sided page freely written, and a photocopy of the tables of the Laplace and the Fourier transforms.

EMERGENCY CLOSING: If the University is closed at the time of a scheduled exam or quiz, it will be given during the next class period when the University reopens. Closures during the final exam period require rescheduling by the Registrar. The Oakland University emergency closing number is 248-370-

2000.

GRADING POLICY: Your course grade will be based on the percentage of total points you have earned out of the 500 points available (2 tests: 300 points, and 1 final exam: 200 points). There is no fixed grading scale for this course, a conversion method will be determined at the end of the course. However, the following list the lowest possible grade that a given percentage will earn: 95%→4.0, 90%→3.6, 80%→3.0, 65%→2.0, 50%→1.0. You can interpolate for the lowest possible grades for intermediate percentages.

MAKE-UP POLICY: **No make-up exams will be given.** If you miss a midterm exam with unavoidable extenuating circumstances and promptly present legitimate documentation for a valid excuse, your grade will be substituted by your final exam; otherwise, a score of 0 will be assigned to a missed exam. Travel and vacation plans do not constitute a valid excuse in this context.

CLASS CONDUCT: Attendance at every class is expected. Success in this course requires an atmosphere conducive to learning. As a courtesy to your fellow students and instructor, please come to class on time and refrain from extraneous conversation during class. All electronic devices must be turned off prior to entering the classroom. If there is reason that you need to leave your phone on, please let me know and arrangements can be made. If circumstances make it necessary for you to leave early, please notify the instructor in advance and leave quietly. Otherwise, come prepared to stay for the entire class. For proper and improper academic behavior please consult the Oakland University Academic Conduct Regulations, which can be found online at https://wwwp.oakland.edu/deanofstudents/student-code-of-conduct/conduct-regulations/.

STUDY HABITS: Cultivating good work and study habits is necessary for doing well in mathematic courses. You should keep on top of the subject by doing large amounts of homework (frequently working on problems not assigned), regularly reviewing earlier material (and material from previous courses), asking questions in class, and making good use of your instructor's office hours and the Tutoring Center. If you are having difficulty with some concept or mathematical procedure, you should get it clarified as soon as possible. If you make mistakes on exams, rework these problems with the idea that you will not make similar mistakes later. Regular reviewing of older material in the course will put you in good stead when the final exam comes around. This will help you to avoid the usual non-retention problems that students encounter at the end of the course. You should expect that doing all of these things will take more than two hours of work out of class for each hour in class. Many students find it helpful to spend some of this time working with others in study groups.

SPECIAL CONSIDERATIONS: Students with disabilities who may require special considerations should contact the Office of Disability Support Services. Such students should also notify their instructor as soon as possible.

VETERAN SUPPORT SERVICES: The Office of Veteran Support Services (VSS) is the campus office responsible for supporting student veterans and military families. Through VSS, veterans and their dependents can be connected to campus and community resources to help ensure they are receiving the benefits they have earned. Student veterans and military dependents who wish to learn more about the services afforded to them should contact VSS, by visiting 116 North Foundation Hall, emailing VSS@oakland.edu, by phone at 248-370-2010 or visiting http://wwwp.oakland.edu/veterans/.

TENTATIVE SYLLABUS:

Below is a tentative syllabus. It is likely that we will deviate from it, but we will get through all of the material. See the text for the topics covered in each section.

Monday	Tuesday	Wednesday	Thursday	Friday
01/01/2018		Syllabus 6.1		
01/08/18 6.2, 6.3		6.3, 6.4		
01/15/18 MLK (No class)		6.5, 6.6		
01/22/18 6.6, 6.7		7.3, 7.4		
01/29/18 8.1		8.2		
02/05/18 **REVIEW**		**EXAM I**		
02/12/18 9.1, 9.2		9.3, 9.4		
02/19/18 **Winter Recess NO CLASS**		**NO CLASS**		
02/26/18 9.5, 9.6		9.7, 9.8		
03/05/18 10.1, 10.2		10.3, 10.4		
03/12/18 10.5		10.6		
03/19/18 10.7		10.8		
03/26/18 **REVIEW**		**EXAM II**		
04/02/18 11.1		11.1, 11.2		
04/09/18 11.2		11.3		
04/16/18 **REVIEW**		**NO CLASS**		
04/23/18 **NO CLASS**		**FINAL EXAM 7:00-10:00 pm**		