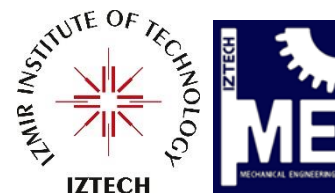


ME242 APPLIED MATHEMATICS FOR ENGINEERS



Course Description: ME242 Applied Mathematics for Engineers (3-0)3 – Spring 2020

Course Instructors: Assoc. Prof. Dr. Gökhan Kiper : gokhankiper@iyte.edu.tr, office: Z14
Assoc. Prof. Dr. H. Seçil Artem: secilartem@iyte.edu.tr, office: 114

Teaching Assistant: Merve Özkahya : merveozkahya@iyte.edu.tr, office: Z57
Murat Demirel : muratdemirel@iyte.edu.tr, office: Z31
Firat Kara : firatkara@iyte.edu.tr, office: Z31

Textbooks: E. Kreyszig, “Advanced Engineering Mathematics”, “10th Ed. John Wiley and Sons, 2011.

Reference Books: 1- M.D. Greenberg, “Advanced Engineering Mathematics”, 2nd Ed., Prentice –Hall, 1998.
2- C.R. Wylie and L. C. Barret, “Advanced Engineering Mathematics”, McGraw Hill, 1995.
3- D. G. Zill, W. S. Wright, “Advanced Engineering Mathematics”, Jones & Bartlett Learning

Lecture Times: Tuesday 10:45 – 11:30 and Thursday 10:45 – 12:30

Classroom: Mechanical Engineering Building A1

Course Outline:

Part I – Vector Analysis (Chps. 9, 10)

- 1- Introduction to vectors, vector fields, curves in space
- 2- Gradient of a scalar function, directional derivative
- 3- Divergence, curl of a vector function
- 4- Line Integrals of vector functions. Work done by a force, path independence
- 5- Integral Theorems

Part II – Complex Numbers (Chp. 13)

- 1- Complex number manipulation, algebra of complex numbers, complex analytic functions.

Part III – Fundamentals of Linear Algebra (Chps. 7, 8)

- 1- Matrices, matrix multiplication
- 2- Linear Systems of Equations
- 3- Determinants, rank of a matrix
- 4- Eigenvalues and eigenvectors of a matrix

Tentative Grading:

Activity	Percent
Midterm-I	30%
Final	40%
Quiz + Homework	25%
Attendance	5%

Important Notes (there will be no exceptions to these)

Official dates of midterm examinations and the final examination will be announced by the Department. The use of any kind of calculators or computers is not allowed. Make-up examinations may be given to those who have valid excuses, which are approved by the department. If you believe that you are entitled to take a make-up examination, you must contact with the course instructor within one week following the regular examination date. If you need any special accommodation during exams or courses regarding your disability please contact the course instructor.

You are expected to attend all lectures with no exceptions. Please remember that students who attend the lectures and keep their own notes, on average, learn better and perform significantly better in exams. Please participate in class. Don't fear to ask or try to prevent your classmates to participate, ask a question or make a comment. It is well known that interactions in class lead to better learning. **Some short quizzes will be given during lecture hours.**

All university course and ethical policies of the university will be strictly followed. All written work turned in for grading must be an independent and individual effort. This includes all homework assignments, exams and any other submitted material that will be graded. Academic dishonesty, including any form of cheating and plagiarism will not be tolerated and may result in failure of the course and/or formal disciplinary proceedings that may lead to suspension or dismissal. Cheating includes but is not limited to such acts as offering or receiving unpermitted assistance in the exams, using any type of unauthorized written material during the exams, handing in any part or all of someone else's work as your own, copying from the Internet. Plagiarism is a specific form of cheating. It means using someone else's work without giving credit; it is a literary theft.

Try to keep all communication channels open with the teaching staff - we are willing to help you learn the course material in the best way you can. Do not hesitate to visit the staff for a face-to-face discussion or send an e-mail to reach them. All announcements and communications of general interest will be posted in the course web page at CMS. You must also check your e-mail frequently for any announcements regarding the course.