Linear Algebra

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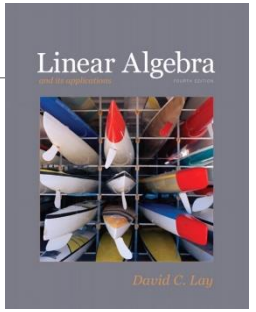
General overview

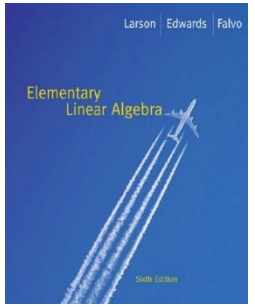
EMP x17	Linear Algebra	3(3,1,0)
Prerequisites: EMP 017. [Math 2]		
System of linear equations: matrix representation, solution techniques, solution nature, echelon form. Matrices and determinants: basic operations and properties. **Transformations:** matrix transformation, linear transformation, one-to-one and onto transformations, applications in computer graphics. **Vector spaces:** vectors, vector spaces and subspaces, null space and column space, rank and dimension, applications in differential equations. **Eigen values and Eigen vectors**: basic equation, characteristic equation, eigenspaces, applications in dynamical systems. Orthogonality and symmetric matrices. Inner product spaces. Least squares problem.		

Text books

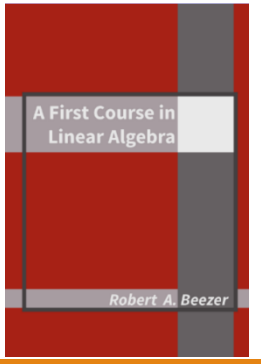
Linear Algebra and its Applications, by David C. Lay.



Elementary Linear Algebra, by Larson et. al.



A First Course in Linear Algebra, by Robert A. Beezer.



Online material

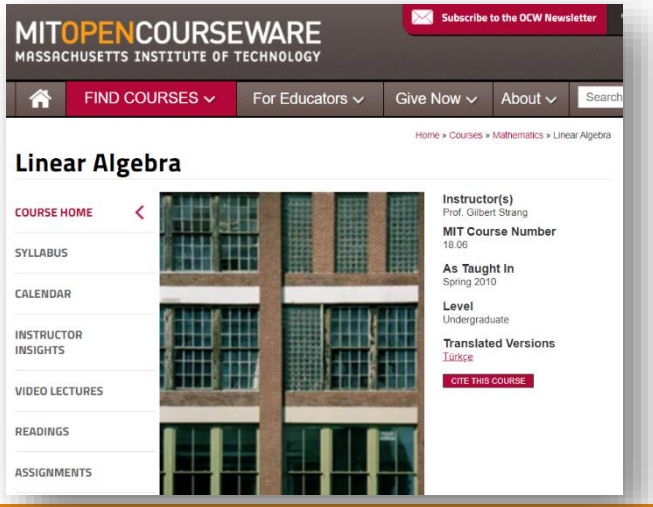
Files section of the team (Team code: wy5w5xf)

Youtube channel (Lectures available when necessary)

https://youtube.com/@drahmedtayel

Other materials

https://ocw.mit.edu/courses/mathematics/18-06-linear-algebra-spring-2010/



Grading

Year work 40 marks

- Midterm 30
- One Quiz 5
- Report 5
- Bonus (Attendance, lec. Quiz, …) 5

Final exam 60 marks

Contact information

1. **Teams Messenger (Team code: wy5w5xf)**
2. **Office hours**
    1. *By appointment*
3. **E-mail**
    1. ahmed.tayel@alexu.edu.eg
4. **Do not contact by WhatsApp or mobile number unless it is very urgent**

Dealing with the course

- **Understand the concepts in lecture as possible.**
- **Complete your understanding using online materials.**
- **Test your understanding with solved examples in the lecture/textbook (By hand).**
- **Practice on as many problems as possible.**

Any questions?

BEFORE WE START!