

# Maths 1

Computer Engineering:  
**ARA-group 2019-20**

Francisco Escolano

Full Professor in Computer Science and AI

**Theory (Group-02):** Mon, 11-13h D-01 Aulario 2  
**Practice (Group-04):** Mon, 13-15h, L23 Politécnica 1  
**Tutoring:** Tue, Wed, 9:30-12:30

# Contents: theory and practice, Evaluation, Bibliography, Some useful links:

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## THEORY

### Linear Algebra

- (2s) 1. Systems of Linear Equations
- (1s) 2. Vectors and Matrices
- (3s) 3. Vector Spaces
- (1s) 4. Linear Transformations
- (1s) 5. Eigenvalues/Eigenvectors

### First-order Logic

- (1s) 6. First-order Logic. Introduction
- (1s) 7. Formalization in FOL
- (1s) 8. Semantics
- (3s) 9. Natural Deduction, Inference

## PRACTICE (14s)

PROLOG-Based Problem Solving (PLMAN)

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## JANUARY



Qualification January (**NE**): **NE** = **T** + **P** (+ **E**)

- [5p] **T**: Final Exam
  - [2p] **L**: Logic
  - [3p] **A**: Algebra
- [5p] **P**: Final qualification of practices (in Lab and remote)
- [3p] **E**: Extra qualification. Activities in the classroom, proposed exercises and excendents of practices (including Sympy for ARA) .

**T: 3 controls ALG + 1 control in LOG**

**P: 3 controls in PLMAN**

## CONDITIONS TO PASS

- **T** ≥ 40% (2p), **P** ≥ 40% (2p) and **NE** ≥ 50% (5p)
  - Extra **E** considered ONLY IF **L** ≥ 50% (1p), **A** ≥ 50% (1.5p) and **P** ≥ 50% (2.5p)
  - In-Lab activities **cannot be recovered**.
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## JULY

Qualification July (**NJ**): **NJ** = **T'** + **P'**

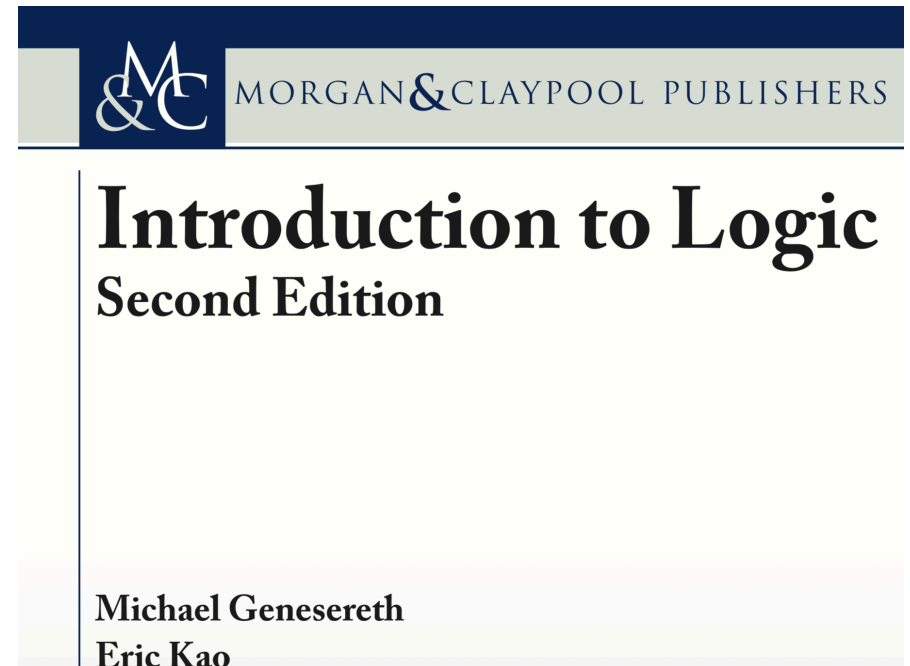
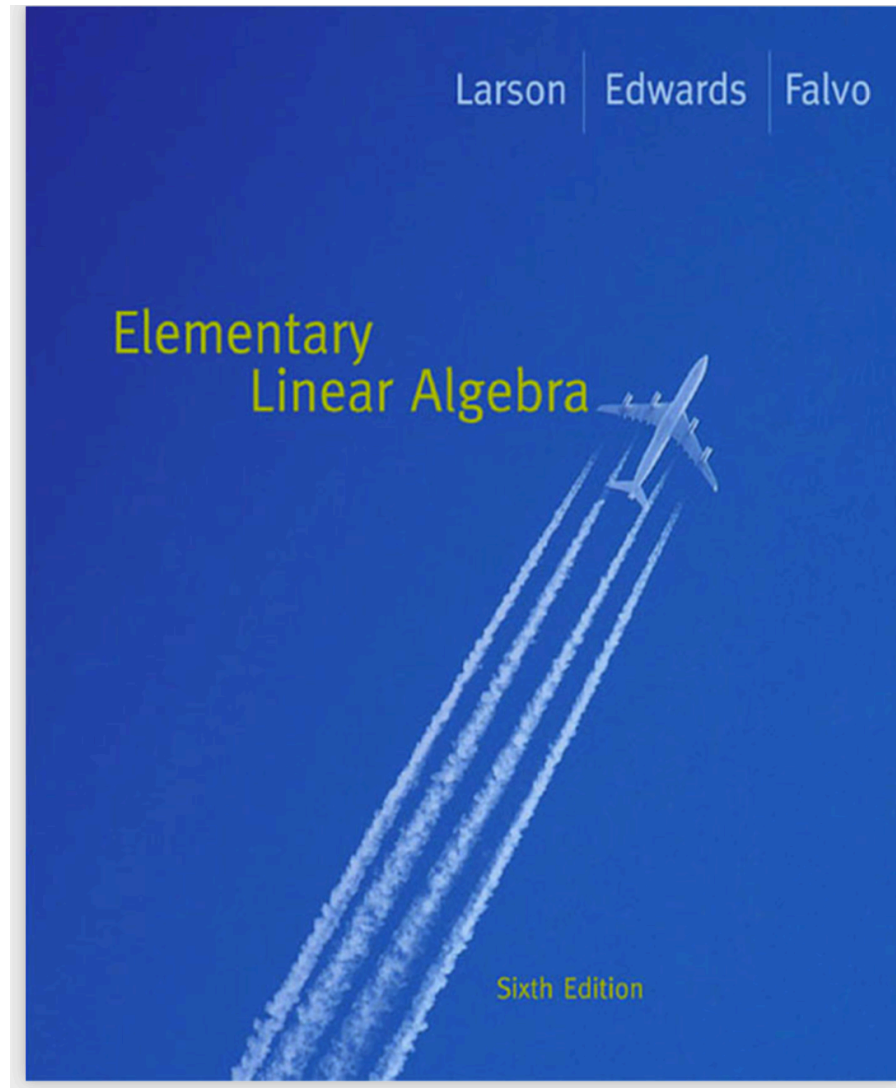
- [5p] **T'**: max(**Te**, **Tj**)
  - **Te** = { **T**, if **T** ≥ 2.5p ; **0**, if **T** ≤ 2.5p }
  - **Tj**: Exam of theory in July
- [5p] **P'**: max(**Pe**, **Pj**)
  - **Pe** = { **P**, if **P** ≥ 2.5p ; **0**, if **P** ≤ 2.5p }
  - **Pj**: Exam of practice in July

## CONDITIONS TO PASS

- **T'** ≥ 40% (2p), **P'** ≥ 40% (2p) and **NJ** ≥ 50% (5p)

Contents: theory and practice, Evaluation, [Bibliography](#), Some useful links:

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OpenCourseware


**Linear Algebra**

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

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# Linear Algebra

COURSE HOME

SYLLABUS

CALENDAR

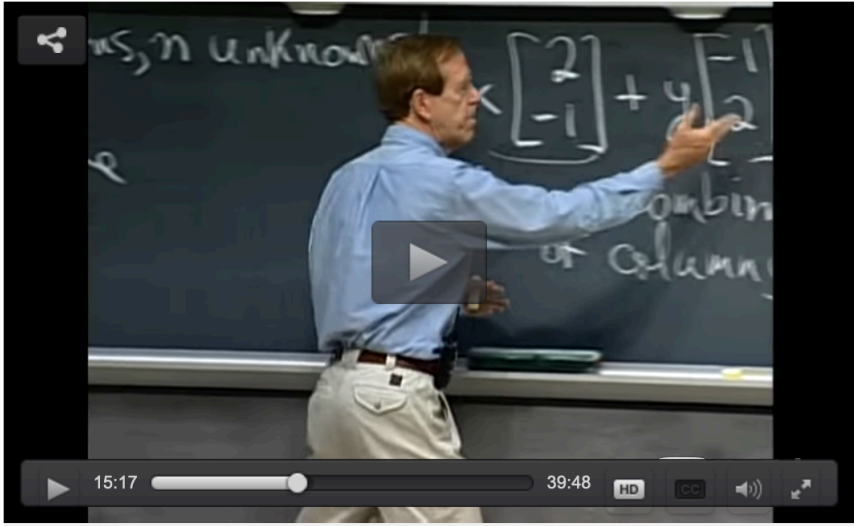
INSTRUCTOR INSIGHTS

**VIDEO LECTURES** <

READINGS

ASSIGNMENTS

## Lecture 1: The geometry of linear equations



15:17 / 39:48

Interactive Transcript

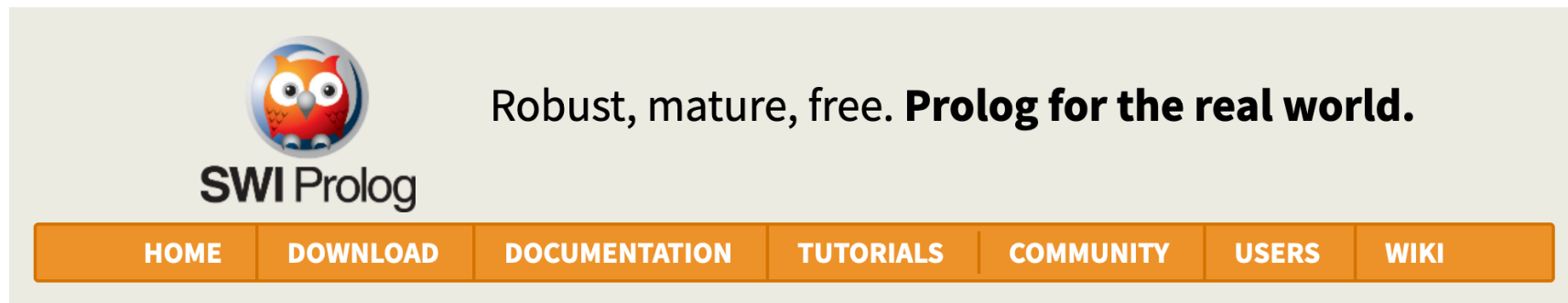
### WHY I GIVE

"MIT OCW is a great way to learn the

Contents: theory and practice, Evaluation, Bibliography, [Some useful links:](#)

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SWI-PROLOG <https://www.swi-prolog.org/>



Adventure in PROLOG <https://www.amzi.com/AdventureInProlog/advtop.php>



Links to Videos  
(Spanish) [byt.ly/Matematicas1](https://byt.ly/Matematicas1)