

Maths 1

Computer Engineering: ARA-group 2023-24

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Theory (Group-02): Mon, 11-13h 0-11 Aulario 3

Practice (Group-04): Mon, 13-15h, EP/0-30I Politécnica 4

Tutoring: Tue, Wed, 9:30-12:30

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

THEORY

First-order Logic

- (1s) 1. First-order Logic. Introduction
- (1s) 2. Formalization in FOL
- (2s) 3. Semantics
- (2s) 4. Natural Deduction, Inference

Linear Algebra

- (2s) 5. Systems of Linear Equations
- (2s) 6. Vectors and Matrices
- (2s) 7. Vector Spaces
- (3s) 8. Eigenvalues/Eigenvectors

PRACTICE (15s)

PROLOG-Based Problem Solving (PLMAN)

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

Sem	Días							Teoría	Control	Valor	Festivo	Prácticas
	04	05	06	07	08	09	10					-
1	11	12	13	14	15	16	17	L: Introducción a Lógica y el lenguaje formal				Introducción Prolog
2	18	19	20	21	22	23	24	L: Formalización en Lógica proposicional				Introducción PLMan + Fase 0 clase
3	25	26	27	28	29	30	01	L: Tablas de Verdad				Introducción Fase 1 + Mapa casa
Octubre												
4	02	03	04	05	06	07	08	L: Contraejemplo	F + TV	0,15		Sesión síncrona
5	09	10	11	12	13	14	15	L: Deducción Natural			T2 T4 T40 P2 P3 P4 P10	Prolog: programación
6	16	17	18	19	20	21	22	L: Deducción Natural				Introducción Fase 2 + Mapa casa
7	23	24	25	26	27	28	29	A: Sistemas Lineales	Logica	0,35		Sesión síncrona
Noviembre												
8	30	31	01	02	03	04	05	A: Sistemas Lineales + Vectores y Matrices			T5 P9 P401	Sesión síncrona
9	06	07	08	09	10	11	12	A: Espacios Vec – Vectores en R^2 y R^3				Introducción Fase 3 + Mapa casa
10	13	14	15	16	17	18	19	A: Espacios Vec – Bases y Dimensión				Sesión síncrona
11	20	21	22	23	24	25	26	A: Espacios Vec – Bases y Dimensión	SL, Mat, SpcVec (\neg CB)	0,60		Sesión síncrona
Diciembre												
12	27	28	29	30	01	02	03	A: Espacios Vec – Cambio de Base				Introducción Fase 4 + Mapa casa
13	04	05	06	07	08	09	10	A: Vectores característicos			T1 T3 T5 P5 P8 P9	Sesión síncrona
14	11	12	13	14	15	16	17	A: Vectores característicos				Sesión síncrona
15	18	19	20	21	22	23	24	A: VC + Repaso global	Todo*	0,90		Sesión síncrona
Navidad												
Enero												
16	01	02	03	04	05	06	07					
17	08	09	10	11	12	13	14	Tutorías				
										2,00		SESIONES SÍNCRONAS MAX >> 8 <<
												SESIONES SÍNCRONAS MIN >> 7 <<

Contents: theory and practice, Evaluation, Bibliography, links:

JANUARY

Qualification January (NE): $NE = C + T + P$

Theory (60%)

- [1.5p] C: Classroom exercises (Moodle)
- [4.5p] T: Oral Final Exam

Practice (40%)

- [4p] P: Weekly practical exercises (sync and async)

CONDITIONS TO PASS:

$C \geq (1.8p)$, $T \geq (1.6p)$ and $NE \geq (5p)$

JULY

Qualification July (NJ): $NJ = C' + T' + P'$

- [1p] C': Classroom exercises (Moodle)
- [5p] T': Recovery Exam
- [4p] P': Recovery Exam

CONDITIONS TO PASS:

- $T' \geq (2p)$, $P' \geq 4 (1.6p)$ and $NJ \geq (5p)$

T

T: 2 inc. controls LOG + 4 inc. controls ALG

P

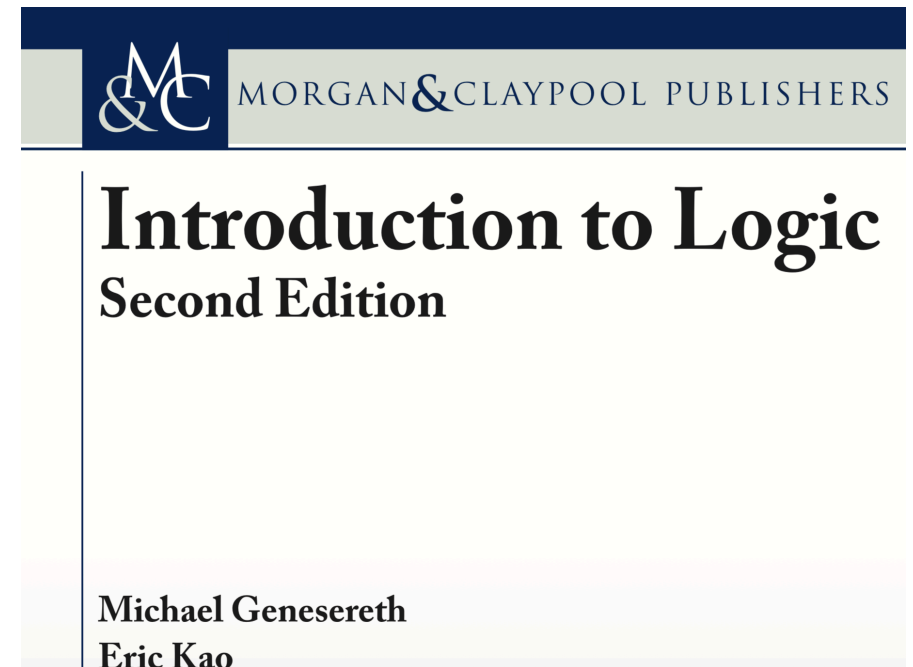
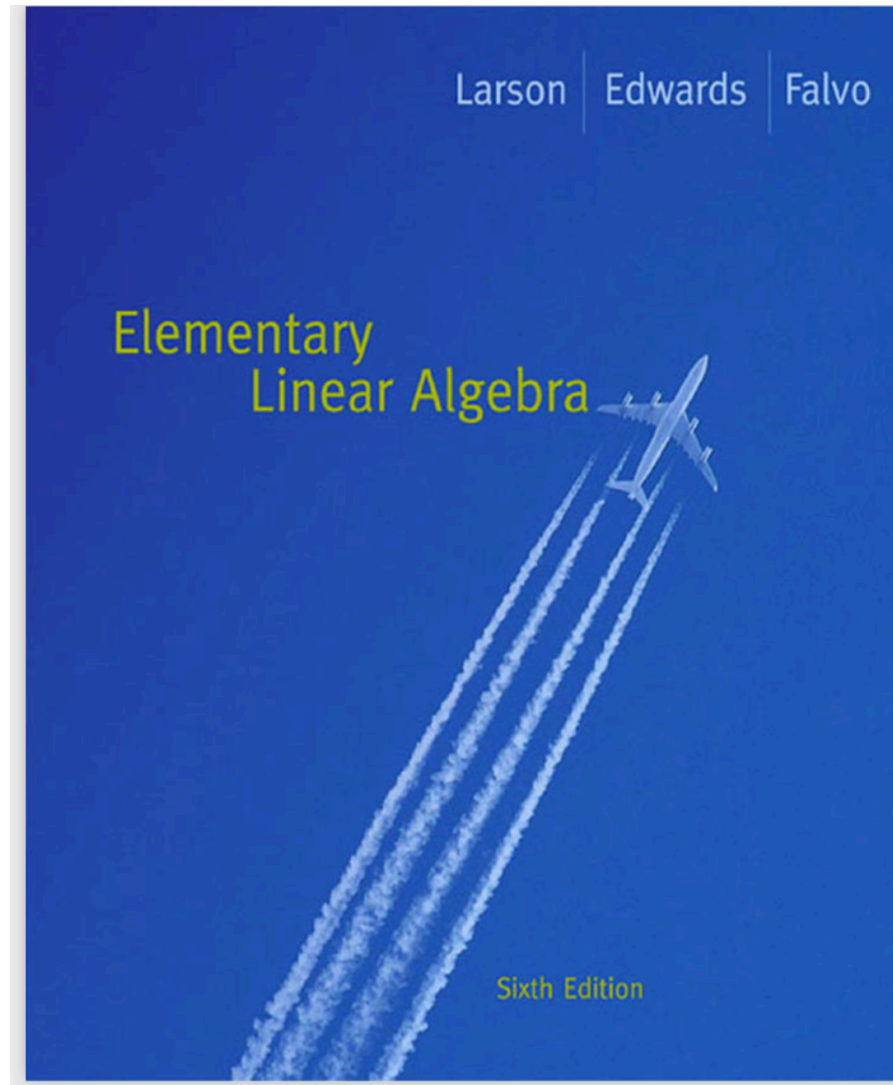
P: 4 Phases in PLMAN

RETAINING JANUARY

- If $T \geq (1.5p)$, $C+T \geq (3p)$ then $C'=C$, $T'=T$
- If $P \geq (2p)$ then $P'=P$

- (C) no-recoverable.
Hold January qualy until 1p.
- Qualy conservation:
 - In in
January $T \geq 2.25$,
same quarry ($T'=T$)
 - If in January
 $P' \geq 2.00$, se
conserva la nota
same qualy ($P'=P$)

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



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MIT
OpenCourseware

Linear Algebra

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

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Linear Algebra

Lecture 1: The geometry of linear equations

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SWI-PROLOG

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



Robust, mature, free. **Prolog for the real world.**

SWI Prolog

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Adventure in PROLOG

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



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Links to Videos (Spanish)

byt.ly/Matematicas1