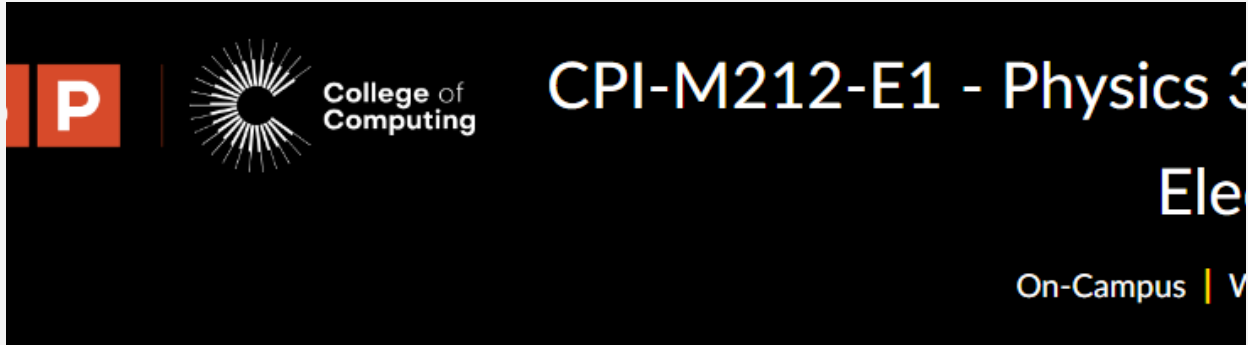


Logbook – Fall 2024



Logbook – Fall 2024 – Digital Electronics

Announcements

Nov 27, 2024
Course evaluation survey

Course Summary					
Course Code	Course Title	Survey Start Date	Survey End Date	Report Access Start	Response Rate
CPI-M212-E1	CPI-M212-E1 - Physics 3 (Electronique numérique)-CPI-M212-E1_202425_1_1	11/25/2024 10:00 AM	12/20/2024 11:59 PM		3.13% (2/64)

Modules

▾ Extra lectures	✓ ▾ + ⋮
Starting with ESP32	✓ ⋮
🔗 Slides 📄	✓ ⋮
Examples	✓ ⋮
🔗 Blinking led 📄	✓ ⋮
🔗 Logic gates 📄	✓ ⋮
▾ Unit 4: Sequential logic	✓ ▾ + ⋮
Lecture 4: Sequential logic	✓ ⋮
🔗 Slides 📄	✓ ⋮
🔗 Lecture notes 📄	✓ ⋮
Additional material	✓ ⋮
🔗 Latches and flip-flops 📄	✓ ⋮
▾ Contrôles continus - Activités pratiques	30% of total + ⋮
📄 Assignment 1 (Practical): Combinational logic (ALU) Due 22 Oct at 18:00 20 Pts	✓ ⋮
📄 Assignment 2 (Practical): Sequential logic (Traffic lights) Due 15 Dec at 23:59 20 Pts	✓ ⋮
▾ Contrôles continus - Midterm exam	30% of total + ⋮
📄 Mid-term exam Available until 27 Nov at 23:59 Due 27 Nov at 23:59 20 Pts	✓ ⋮

37 submissions

- **Examen final de fin de semestre (Jan 13 to 16, 2025)**
 - **(40%) Un examen final** (Date to be defined by the administration)
 - Topics:
 - Clock circuits (monostable, astable, 555)
 - Sequential logic (Latches, flip-flops, state machines, next-state logic)
 - [Lecture notes](#)
 - Special circuits (counters, chronometers, sequence detectors)

Resources

Online shop for electronic devices: [Produits Archive - MicroPlanet Maroc](#)

Work groups

Nom	Prénom	Adresse email UM6P	Work group	Have the kit?
17 BOUGUERFA	MOUAD	Mouad.BOUGUERFA@um6p.ma	1	TRUE
18 BOUHNIB	ABDERRAHMANE	Abderrahmane.BOUHNIB@um6p.ma	1	TRUE
20 BOURICH	YASSINE	Yassine.BOURICH@um6p.ma	1	TRUE
39 HAJJAJI	ADAM	Adam.HAJJAJI@um6p.ma	2	FALSE
43 JALI	ZAKARIAE	Zakariae.JALI@um6p.ma	2	FALSE
14 BENSAFIR	MOUAD	Mouad.BENSAFIR@um6p.ma	3	FALSE
54 QADDA	SALIM	Salim.QADDA@um6p.ma	3	FALSE
55 QUADIMI	AHMED	Ahmed.QUADIMI@um6p.ma	3	FALSE
29 EL GOURJI	NASREDDINE	Nasreddine.ELGOURJI@um6p.ma	4	FALSE
38 HAIKAL	MOUAD	Mouad.HAIKAL@um6p.ma	4	FALSE
40 IBHI	AHMED YASSINE	Ahmed.IBHI@um6p.ma	4	FALSE
61 TALTY	YASSER	Yasser.TALTY@um6p.ma	4	FALSE
3 ACHIBANE	ANIR	Anir.ACHIBANE@um6p.ma	5	FALSE
35 GUERAIRATE	YOUSSEF	Youssef.GUERAIRATE@um6p.ma	5	FALSE
45 LAZREK	NASSIM	Nassim.LAZREK@um6p.ma	5	FALSE
47 LKANIT	MOHAMED TAIB	Mohamed.LKANIT@um6p.ma	5	FALSE
9 ATOUANI	IMAD	Imad.ATOUANI@um6p.ma	6	FALSE
22 CHAHTI	MOAD	Moad.CHAHTI@um6p.ma	6	FALSE
26 EL AZZOUZI	AYOUB	Ayoub.ELAZZOUZI@um6p.ma	6	FALSE
58 SKIRIBA	ILYASS	Ilyass.SKIRIBA@um6p.ma	6	FALSE
50 NANA	MOHAMED IDRIS	Mohamed.NANA@um6p.ma	7	FALSE
57 RHALLAMI	RHITA	Rhita.RHALLAMI@um6p.ma	7	FALSE
59 SNISSI	ASSIA	Assia.SNISSI@um6p.ma	7	FALSE
5 AJKRIR	MAROUA	Maroua.AJKRIR@um6p.ma	8	FALSE
31 EL MAHDAOUI	ALAE	Alae.ELMAHDAOUI@um6p.ma	8	FALSE
46 LEKBIRI	KHADIJA	Khadija.LEKBIRI@um6p.ma	8	FALSE

SQUALLI				
60 HOUSSAINI	AYA	Aya.HOUSSAINI@um6p.ma	8	FALSE
15 BENTALEB	YOUSSEF	Youssef.BENTALEB@um6p.ma	9	FALSE
41 IGADERN	AYA	Aya.IGADERN@um6p.ma	9	FALSE
44 KHATIRI	MOHAMMED	Mohammed.KHATIRI@um6p.ma	9	FALSE
63 ZAIDI	MANAL	Manal.ZAIDI@um6p.ma	9	FALSE
32 EL-TANTAOUI	YAHYA	Yahya.EL-TANTAOUI@um6p.ma	10	FALSE
37 HAFIDI	OMAR	Omar.HAFIDI@um6p.ma	10	FALSE
48 MAMZE	WALID	Walid.MAMZE@um6p.ma	10	FALSE
49 MOUSSAIF	AYOUB	Ayoub.MOUSSAIF@um6p.ma	10	FALSE
2 ABOUZAI	ABDERRAHM ANE-FOUZI	Abderrahmane.ABOUZAI@um6p.ma	11	FALSE
23 CHEDDADI	MOHAMED EL AMINE	mohamed.cheddadi@um6p.ma	11	FALSE
34 GOUGASSE	HAMZA	Hamza.GOUGASSE@um6p.ma	11	FALSE
36 GUERRAB	SARA	Sara.GUERRAB@um6p.ma	11	FALSE
BOUTBAOUC				
21 HT	IMAD	Imad.BOUTBAOUC@um6p.ma	12	FALSE
51 OUABRK	TARIK	Tarik.OUABRK@um6p.ma	12	FALSE
62 YAQDANE	OUSSAMA	Oussama.YAQDANE@um6p.ma	12	FALSE
64 ZITOUNI	YASSINE	Yassine.ZITOUNI@um6p.ma	12	FALSE
1 ABAOUZ	BADR	Badr.ABAOUZ@um6p.ma	13	FALSE
33 GHIATI	OUSSAMA	Oussama.GHIATI@um6p.ma	13	FALSE
53 OUSSAYH	ABDERRAHIM	Abderrahim.OUSSAYH@um6p.ma	13	FALSE
7 AMHALI	FARAH	Farah.AMHALI@um6p.ma	14	TRUE
13 BENJELLOUN	AYA	Aya.BENJELLOUN@um6p.ma	14	TRUE
27 EL BOUANANI	HIBA	Hiba.ELBOUANANI@um6p.ma	14	TRUE
10 BAOUZIL	YASSER	Yasser.BAOUZIL@um6p.ma	15	FALSE
16 BOUBRIK	AYMEN	Aymen.BOUBRIK@um6p.ma	15	FALSE
28 EL BOURKADI	ABDERRAHM ANE	Abderrahmane.ELBOURKADI@um6p.m a	15	FALSE
56 RHALLAB	HAYTAM	Haytam.RHALLAB@um6p.ma	15	FALSE
4 AIT LAHCEN	MOHAMED	Mohamed.AITLAHCEN@um6p.ma	16	FALSE

6	AKSIKAS	MOHAMED SOUHAIB	Mohamed.AKSIKAS@um6p.ma	16	FALSE
12	BENALI	AMINE	Amine.BENALI@um6p.ma	16	FALSE
24	DALDOULI	MOHAMED	Mohamed.DALDOULI@um6p.ma	16	FALSE
8	AMMARI	SALMA	Salma.AMMARI@um6p.ma	17	FALSE
11	BELLAMINE	GHITA	Ghita.BELLAMINE@um6p.ma	17	FALSE
25	EDDIB	CHAIMA	Chaima.EDDIB@um6p.ma	17	FALSE
52	OUHMAD	HIBA	Hiba.OUHMAD@um6p.ma	17	FALSE
19	BOUHZAM	FARAH	Farah.BOUHZAM@um6p.ma	18	FALSE
30	EL IAMANI	NOUR EL HOUDA	Nourelhouda.ELIAMANI@um6p.ma	18	FALSE
42	IMAD	KHADIJA	Khadija.IMAD@um6p.ma	18	FALSE

Evaluation policies

- Examen final de fin de semestre

- (40%) **Un examen final** (Jan 15, 2025 10:00 AM) Room: Salle TC-H-13

- Topics:

- Clock circuits (astable, 555)
- Sequential logic (Latches D, flip-flops D, state machines using latches/flip-flops D only, next-state logic)
- Special circuits (counters, chronometers, sequence detectors)
- Material: [Lecture notes](#) [Slides](#)
- Students are requested to adhere to the  **Written exams policies**

- Contrôles continus

- (30%) **Épreuve écrite** : Mid-term exam (Nov 7, 2024 10:30 AM)
 - Topics:
 - Introduction to digital systems (digital signals, quantization, DAC)

- [Lecture notes](#)
- Combinational logic (logic gates, Boolean equations, Karnaugh maps)
 - Textbook [\[1\]](#) ([Link](#)): Chap. 1 and 2. Problems: Pages 35 to 38, 56 to 58
- Combinational circuits (coder, decoders, adder, subtractor, ALUs, displays)
 - Textbook [\[1\]](#) ([Link](#)): Chap. 3 and 4. Problems: Pages 91 to 93, 118 to 122
- Students are requested to adhere to the [Written exams policies](#)
- **(Extra grade) [Additional assignment - Midterm exam](#)**
Nov 27, 2024 11:59 PM (Optional)
- **(30%) [Activités pratiques](#)** : Projets de réalisation avec soutenance + simulation/implementation + report
 - Practicals (in groups):
 - ☐ **(15%) [Practical 1: Combinational logic \(ALU\)](#)**
Deliverables due: Oct 22, 2024 6:00 PM Q&A Session: Oct 23, 2024 8:00 AM
 - ☐ **(15%) [Practical 2: Sequential logic \(Traffic lights system\)](#)**
Deliverables due: Dec 15, 2024 11:59 PM Q&A Session: Not included
 - ☒ ~~Practical 3: Special circuit/Final project (Date: TBD)~~

Recommended textbooks

- [1] Kaushik, D. K. "Digital Electronics." (2021). [Link](#)
- [2] Asadi, F., 2024. *Digital Circuits Laboratory Manual*. Springer. [Link](#)
- [3] Messerli, E. and Meyer, Y., 2010. Electronique Numérique 1er tome Systèmes combinatoires. *Institut REDS HEIG-VD Haute Ecole d'Ingénierie et de Gestion du Canton de Vaud*. [Link](#)
- [4] Belleudy, C., and D. Gaffé. "Electronique Numérique." [Link](#)

Lectures

Nov 27, 2024 W8: Starting with ESP 32 + Sequential logic + MATLAB practical

- **Lecture 4: Sequential logic (Int.)**
 - [Slides](#)
 - [Lecture notes](#)
 - Additional material:
 -  DE_latches_and_flipflops.pdf
 -  DE_Gated_latch_SR.pdf
 -  Sequence_detector_101_example
 - Notebooks:
 - [Sequence detector diagram](#)
- **Extra lecture: Starting with ESP32**
 - [Slides](#)
 - Examples:
 - [Blinking led](#)
 - [Digital gates](#)
- **MATLAB Practical - Simulink simulations**

Oct 23, 2024 W7: Q&A session + Practical session

- **Q&A session: Assignment 1 / Midterm exam preparation** (See [Evaluation policies](#))
- **Extra lecture: Starting with ESP32**
 - [Slides](#)
 - Examples:
 - [Blinking led](#)
 - [Digital gates](#)
- **Practical exercise: Use of Simulink from MATLAB to simulate logic circuits** – by ElBachir BOUDDIA

Oct 16, 2024 W6: Combinational logic (Assignment 1) + Sequential Logic (Int.)

- **Lecture 3: Combinational logic (3rd part)**

- [Assignment 1: Combinational logic](#)
- **Lecture 4: Sequential logic (Int.)**
 - [Slides](#)

Oct 9, 2024 W5: Combinational logic (Assignment 1)

- **Lecture 3: Combinational logic (3rd part)**
 - [Assignment 1: Combinational logic](#)

Oct 2, 2024 W4: Combinational logic (Cont.)

- **Lecture 3: Combinational logic (2nd part)**
 - Minterms and maxterms
 - Karnaugh maps
 - Other combinational circuits (multiplexers, adder, displays, decoders)
 - [Slides](#)
 - Recommended reading:
 - Textbook [\[1\]](#) ([Link](#)): Chap. 3 and 4. Problems: Pages 91 to 93, 118 to 122
 - [Assignment 1: Combinational logic](#)

Sep 25, 2024 W3: Combinational logic

- **Lecture 3: Combinational logic (1st part)**
 - Gate circuits
 - Boolean equations
 - [Slides](#)
 - Recommended reading:
 - Textbook [\[1\]](#) ([Link](#)): Chap. 3 and 4. Problems: Pages 91 to 93, 118 to 122

Sep 18, 2024 W2: Number systems and logic gates

- **Lecture 2: Number systems and logic gates**
 - Octal, hexadecimal, decimal
 - Binary numbers
 - Logic gates: circuits and notation
 - [Slides](#)
 - [Lecture notes](#)
 - Recommended reading:

- Textbook [\[1\]\(Link\)](#): Chap. 3 and 4. Problems: Pages 91 to 93, 118 to 122

Sep 11, 2024 W1: Course presentation – Introduction to digital systems

- **Lecture 1:** Introduction to digital systems
 - Digital signals
 - Analog to Digital and Digital to Analog conversion
 - Quantization
 - [Slides](#)
 - [Lecture notes](#)
- **Lecture 0:** Motivation and course presentation
 - Course outline
 - Evaluation policies
 - Teaching strategy
 - [Slides](#)