

# CSE121: IoT

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## ESP32

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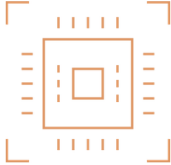
**Baskin School of Engineering**  
University of California, Santa Cruz

- CSE121 times:
  - Monday: John noon-2pm
  - Tuesday: class 9:50-11:25, John noon-2pm
  - Wednesday: Aravind 3-5pm
  - Thursday: class 9:50-11:25, Jose 3-4:30pm
  - Friday: Aravind: 10am-noon

- <https://www.espressif.com/en/support/documents/technical-documents>
- <https://docs.espressif.com/projects/esp-idf/en/latest/esp32c3/index.html>
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# ESP32???

- <https://www.espressif.com/en/products/hardware>



### SoCs

Espressif offers well-integrated, reliable and energy-efficient wireless SoCs. Check them out and you will see why they have become so popular with the maker community.

[ESP SoCs >](#)

- [ESP32-S](#)
  - [ESP32-S3 >](#)
  - [ESP32-S2 >](#)
- [ESP32-C](#)
  - [ESP32-C3 >](#)
- [ESP32 >](#)
- [ESP8266 >](#)




### Modules

Espressif offers a wide range of fully-certified modules combining Wi-Fi and BT/BLE. Powered by our own advanced SoCs, they are the modules of choice.

[ESP Modules >](#)

- [ESP32-S](#)
  - [ESP32-S2 >](#)
- [ESP32-C](#)
  - [ESP32-C3 >](#)
- [ESP32 >](#)
- [ESP8266 >](#)



### Development Boards

For easy prototyping and interfacing, choose Espressif's development boards. Use our all-in-one dev boards to create your own IoT applications quickly and hassle-free.

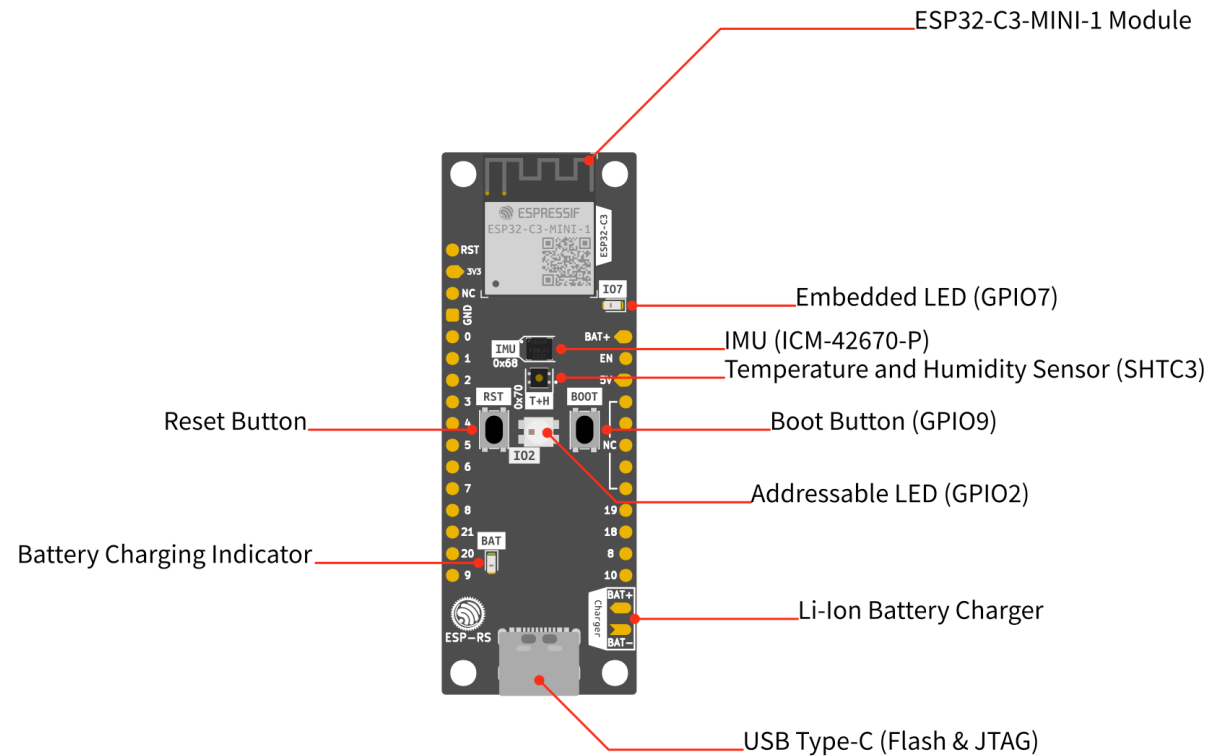
[ESP Development Boards >](#)

- [ESP32-C3 DevKits >](#)
- [ESP32-DevKitC >](#)
- [ESP-EYE >](#)
- [ESP Audio DevKits >](#)
- [ESP32-GoogleCloud IoT Kit >](#)



# SoC vs Module vs Board

- SoC (System on Chip)
  - The RISC-V core + interrupts + basic hardware
- Module
  - SoC + radios + some peripherals
- Board



# Let's build something

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- `idf.py create-project test1`
- `idf.py set-target esp32c3`
- `idf.py menuconfig`
- <https://docs.espressif.com/projects/esp-idf/en/latest/esp32/api-reference/system/log.html>

- Intro and show how to use chatGPT