ECE3088 Embedded Software

Fall 2025
Department of Computer Engineering
Chonnam National University

Course Info   ECE3088 Embedded Software (01/02)
Third-year required major course

Instructor   Hyung-Il Kim [Email: hyungil.kim@jnu.ac.kr] from the School of ECE
Engineering Building #6-717 (ext. 1762)

Class Meetings   Monday & Wednesday 09:00-11:00 (01) / 11:00-13:00 (02)
Engineering Building #6-720

Office Hours   Google calendar appointment slots

Class Objectives   This course introduces key concepts of embedded software, including
memory, file systems, bootloader, and device drivers, along with hands-on
development using Arduino-based platforms.

Prerequisites   C Programming, Python Programming

Textbook   TBD

Topics   Embedded software fundamentals, Arduino programming, peripherals,
memory systems, interrupts, device drivers, and Linux programming

Evaluation   Final exam (30%), Project (40%), Homework (20%),
Attendance (5%), Participation (5%)

Lecture   The first half of the course will cover Arduino programming-based project.
The second half will cover general embedded software concepts.

Lab　　　　The first half of the lab session will feature hands-on exercises using Arduino, while the second half will feature some hands-on exercise using the Raspberry Pi (or an emulator).

Schedule　　　The following course schedule is subject to change depending on the progress of the course.

Week	Contents	
1	Course Introduction	Arduino Lab Introduction
2	Arduino (1/4): Introduction to Embedded Systems	
3	Arduino (2/4): Sensors, Actuators, and I/O	
4	Arduino (3/4): Communication	
5	Arduino (4/4): Project Development & Prototyping	
6	Chuseok Holiday	
7	Project preparation, ARM-based embedded system	
8	Midterm period (no midterm exam)	
9	Project presentation	
10	Linux system	
11	Bootloader, programming language	
12	Process & threads	
13	Software build, interrupt & scheduling	
14	Device driver	
15	Applications of Embedded Software	
16	Final exam	