EL-502 (Embedded System Design)

Credit Structure (L-T-P-Cr): 3 0 2 4

Content:
The concept of embedded systems design. Embedded microcontroller (ARM Architecture) cores, embedded memories. Examples of embedded systems.; Technological aspects of embedded systems: interfacing between analog and digital blocks, signal conditioning. Implementation of Low-power schemes, interfacing with external systems, user interfacing. Design trade-offs due to process compatibility, thermal considerations, temperature compensation methodologies. Software aspects of embedded systems: real time programming languages and operating systems for embedded systems.

Suggested Text/s:

- Lecture Notes of EE712: EMBEDDED SYSTEMS DESIGN, Prof. P. C. Pandey and Prof. D. K. Sharma, IIT Bombay, 2014.
- J.W. Valvano, "Embedded Microcomputor System: Real Time Interfacing", Brooks/Cole, 2000.
- Jack Ganssle, "The Art of Designing Embedded Systems", Newnes, 1999.
- K.J. Ayala, "The 8051 Microcontroller: Architecture, Programming, and Applications", Penram Intl, 1996.

Course structure:

1) Mid Sem: 30%
2) End Sem: 40%
3) Lab assignments and project: 30%