Embedded System Design

Course

Lecture + 2 Exams + 2 Projects

Lecture

– 12 sessions in total
– Sessions 1~3: 蔡文錦
– Sessions 4~6: 鍾崇斌
– Sessions 7~9: 陳穎平
– Sessions 10~12: 張立平
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Lecture

1. Embedded system overview, EOS design concept, EOS overview.

2. Embedded system development, bootloader design, timer/interrupt/exception design (I).

3. Timer/interrupt/exception design (II).

4. Embedded processor, real-time computing, and SoC fundamentals.

5. ARM processor: architecture, organization, and implementation.

6. Architectural support for SoC development.
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7. Windows CE 概述、Windows CE 作業系統描述 I
   (Windows CE Introduction, Windows CE OS Description I)

8. Windows CE 作業系統描述 II、Windows CE 重要組件和特性
   (Windows CE OS Description II, Windows CE Components and Features)

9. Windows CE 應用程式開發、.NET Compact Framework 應用程式開發
   (Windows CE Application Development, .NET Compact Framework Application Development)

10. 即時排程演算法之分析與實作
    (Cyclic-executive, RMS, and EDF)

11. 即時資源共享協定 (PIP, PCP, and SRP)

12. 偶發性及非週期性之即時工作排程
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Exams (70%)
- 1 mid term + 1 final term
  - mid term: sessions 1~3(50%), 4~6(50%)
  - final term: sessions 7~9(50%), 10~12(50%)

Projects (30%)
- 1 software programming + 1 oral presentation
  - Programming:
    - individual work
    - Project details and due will be announced during course
  - Oral presentation (last 2 weeks)
    - Team work
    - Embedded System related topics (not limited to h/w or s/w)
    - Hand-in topic brief first, and make the talk after final exam.
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Grading

- Exams (70%)
  - mid term (35%)
  - final term (35%)

- Projects (30%)
  - s/w programming (15%)
  - Oral presentation (15%)

Lecture handout download (sessions 1~3)

http://www.csie.nctu.edu.tw/~wjtsai/