CENG 5434: Microcomputer Systems Design 11/09/2022

WELCOME REMIND ME TO RECORD

- **REDO Quiz problems you missed if less than 75 score – with good details. References from my lectures or our website. Mail it to me.**

- **I2. In class Quiz November 30, 2022   Closed Book**

- **I3. Let's Go over the rules for the Project**
No 8051 chips. Expect wireless connections for your project.

HW8 – Your first project report next week– Follow the instructions
   Present a very short description of your project to the class. Turn in HW8.

- **Your final project presentation Talk about 5 minutes. December 7, 2022**

Dec. 5-10	Regular Session Finals week

Final Report should be 5 or 6 Pages not including the Introductory material and the Glossary, References, and Appendix (Use the Appendix for Data). Turn in the report and the slide presentation – Limit the number of slides please.

Don't tell me about OLD microcontrollers. Include a wireless module.

Consider examples from our lecture in descriptions – Need RTOS, Security, Safety considerations, Power Calculations, Certifications, etc?

REVIEW LECTURE1 11/9/2022

LAST TIME WE TALKED ABOUT --- Power problems and calculation and Patents, Certifications and Safety standards.

SUMMARY of Last Lecture -

1_Lecture_11_2_2022Summary.pdf

LECTURE Requirements and Specifications

2_Requirements and Specifications_Quick Review.pdf

3_Various Requirements of a General Nature – Review

4_Embedded Product Design Engineer_Skills.pdf

https://hibernicor.com/embedded-product-design-engineer/

5_Bates Design (See Bates' Document)

5_1 Kelvin's Good Report

Smart Appliances

https://lockly.com/pages/about-lockly

Hasan's Product ? -   Advanced Locks

Does your toaster play Chess?

Lecture 6 Real-Time Operating Systems

6_0_What is "real-time control" and why do you need it_TI.pdf

https://e2e.ti.com/blogs_/b/analogwire/posts/what-is-real-time-control-and-why-do-you-need-it

6_1_What is a Real Time Embedded System?

6_2_Introduction to RTOS DigiKey.pdf
Introduction to RTOS Part 1 –
What is a Real-Time Operating System (RTOS)?
   Digi-Key Electronics   11:33   114K subscribers
   https://www.youtube.com/watch?v=F321087yYy4

C2000 real-time microcontrollers Real-time MCUs enabling digital power and motor control in industrial and automotive applications
https://www.ti.com/microcontrollers-mcus-processors/microcontrollers/c2000-real-time-control-mcus/overview.html

6_3_Guide for Developing With C2000 Real-Time Microcontrollers.pdf – 68 Pages

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LECTURE 7 SECURITY IN EMBEDDED SYSTEMS

7_1 Essential Smart Home Security Tips For Securing Your Smart Home.pdf

https://wltd.org/posts/7-essential-smart-home-security-tips-for-securing-your-smart-home

7_2_When Refrigerators Attack_Cyber Criminals Infect Appliances.pdf

https://sectigo.com/resource-library/when-refrigerators-attack-how-cyber-criminals-infect-appliances-and-how-manufacturers-can-stop-them

Understanding security threats to embedded systems and IoT devices 21:28
102K subscribers

https://www.youtube.com/watch?v=SOx-8Ltmm7g