General Logistics & Overview
20% Continous Assesment
80% Exam (4 Questions)

Overview of Embedded systems and topics

What is an Embedded system or an embedded computing system ?

- Provides the ground work for the Internet of things.
- The computing is more prevalent

Embedded Platform Architecture.

- Overview
- Memory and shared technologies.
- Devices interconnects and interface.

Embedded processor architecture.

- Extract the commonalities.
- Basic execution environment
- Interrupt classes.
- Interrupts.
- Memory management units.

Embedded Platform Boot Sequence

- *Boot technologiess*
- *Hardware power sequences*
- *Multiprocessors / multicore booting*
- *Legacy BIOS and Unified Extensible Firmware Interface (UEFI)*

Power Optimization

- Power basics.
- Power profiling.
- Constant Vs. Dynamic power.
- Power efficiency
- Optimization software for power performance.
- " Power performance can be seen as a budget if you consider a systme that may be running for years in the field uninterrupted"

Digital Signal Processing

- At least a little overview.
- Single instruction and multiple data (SIMD) and vectorization.
- Finite Input response filters.
- Control theory / modelling.

Embedded Linux

- Tool chain.
- Anatomy of embedded linux systems.
- Driver development

Network Connectivity

Advanced Topics.

- Symmetric multiprocessing (SIMP)
- Asymmetric multiprocessing (AIMP)
- Virtualizations and the impact of the cloud system.