Keonics Certified RTOS Engineering

Duration: 3 Months

- Basic features of real-time operating systems
- OS Vs RTOS
- Tasks and tasking
- Scheduling – concepts and implementation
- Resource contention and deadlocks
- Inter task communication
- Memory management
  - OS structures from Nano kernels through Micro kernels to full RTOSs
  - Process, Memory, File system, Device and Memory management aspects
  - Performance and safety features
  - Development support
  - Real-Time benchmarking
  - Overview of some modern OS's(e.g. VxWorks, RTKernel, OSE Delta, Windows CE)

VHDL PROGRAMMING

INTRODUCTION TO VHDL

- Need, Scope, Use and history of VHDL
- Application of VHDL in market and industries
- Special features of this language
- Design Process and Steps
- Design Simulation and Design Synthesis
- Design Methodology
- VHDL Modeling Styles
- Discussion on VHDL and other languages
- Data Types in VHDL
- Objects in VHDL
- Operators in VHDL

CONDITIONAL STATEMENTS AND LOOPS IN VHDL

- With select statements
- When else statements

- If statement
- Case statement
- Loops in VHDL

STRUCTURAL STYLE & SUBPROGRAMS

- Components
- Benefits of Structural Style
- Structural Style of Modeling
- Basic features of real-time operating systems
- Tasks and tasking
- Scheduling – concepts and implementation
- Control of shared resources – mutual exclusion
- Resource contention and deadlocks
- Inter task communication
- Memory management
- OS structures from Nanokernels through
- Microkernels to full RTOSs - Process, Memory, Filesystem, Device and Memory
- management aspects- Performance and safety features
- Real-Time Posix issues
- Development support
- Real-Time benchmarking
- Vx-works or Ucos-C