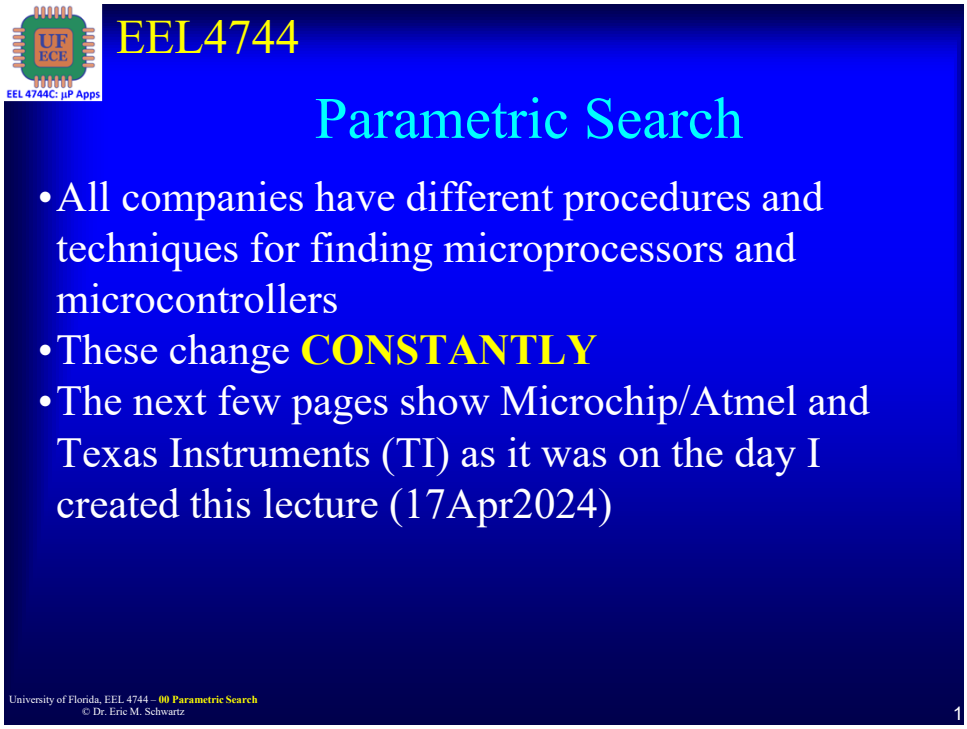
EEL4744
Parametric Search
•All companies have different procedures and techniques for finding microprocessors and microcontrollers
•These change CONSTANTLY
•The next few pages show Microchip/Atmel and Texas Instruments (TI) as it was on the day I created this lecture (17Apr2024)
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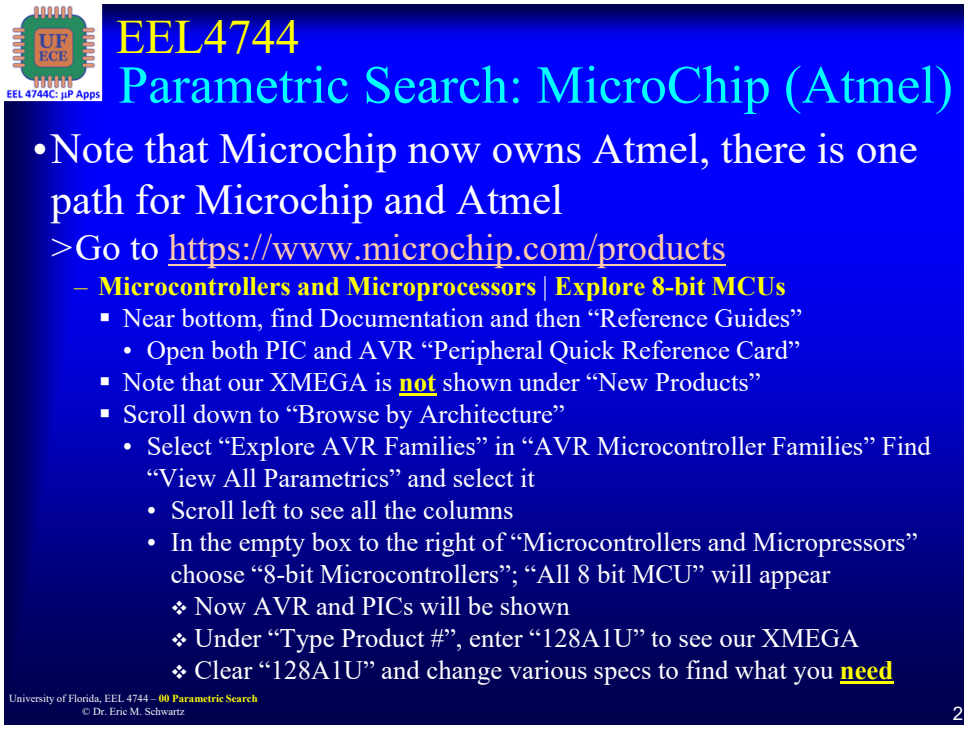
EEL4744
Parametric Search: MicroChip (Atmel)
•Note that Microchip now owns Atmel, there is one path for Microchip and Atmel
>Go to https://www.microchip.com/products
– Microcontrollers and Microprocessors | Explore 8-bit MCUs
▪ Near bottom, find Documentation and then "Reference Guides"
• Open both PIC and AVR "Peripheral Quick Reference Card"
▪ Note that our XMEGA is not shown under "New Products"
▪ Scroll down to "Browse by Architecture"
• Select "Explore AVR Families" in "AVR Microcontroller Families" Find "View All Parametrics" and select it
• Scroll left to see all the columns
• In the empty box to the right of "Microcontrollers and Micropressors" choose "8-bit Microcontrollers"; "All 8 bit MCU" will appear
❖ Now AVR and PICs will be shown
❖ Under "Type Product #", enter "128A1U" to see our XMEGA
❖ Clear "128A1U" and change various specs to find what you need
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Parametric Search: MicroChip (Atmel)
>Go back to Products | Microcontrollers and Microprocessors | Explore 8-bit MCUs
– https://www.microchip.com/en-us/products/microcontrollers-and-microprocessors/8-bit-mcus
– Under Start Developing find Get Started with AVR MCUs and select Start Here
▪ Select Develop Your Project
o Does NOT show Microchip/Atmel Studio, but shows other integrated development environments
o MPLAB X IDE and MPLAB XPRESS IDE
>But now go to the top and see Tools and Resources then select Develop
– Next to Browse Develop, select view all
– Notice now the MicroChip Studio IDE (for AVR …) is now shown
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Developer Tools: MicroChip (Atmel)
•To get to Development Tool Selector
>On top select Tools and Resources | Search and Discover | Development Tool Selector
– Enter part number (like ATXMEGA128A1U)
▪ Until last semester, you would see three choices (including Microchip Studio)
• Now only see MPLAB X IDE and MPLAB XC COMPILER
• Select Legacy (on the left) and you'll see Microchip STUDIO
• Select 3rd Party Tools (on the left) and you'll see IAR Systems and GCC
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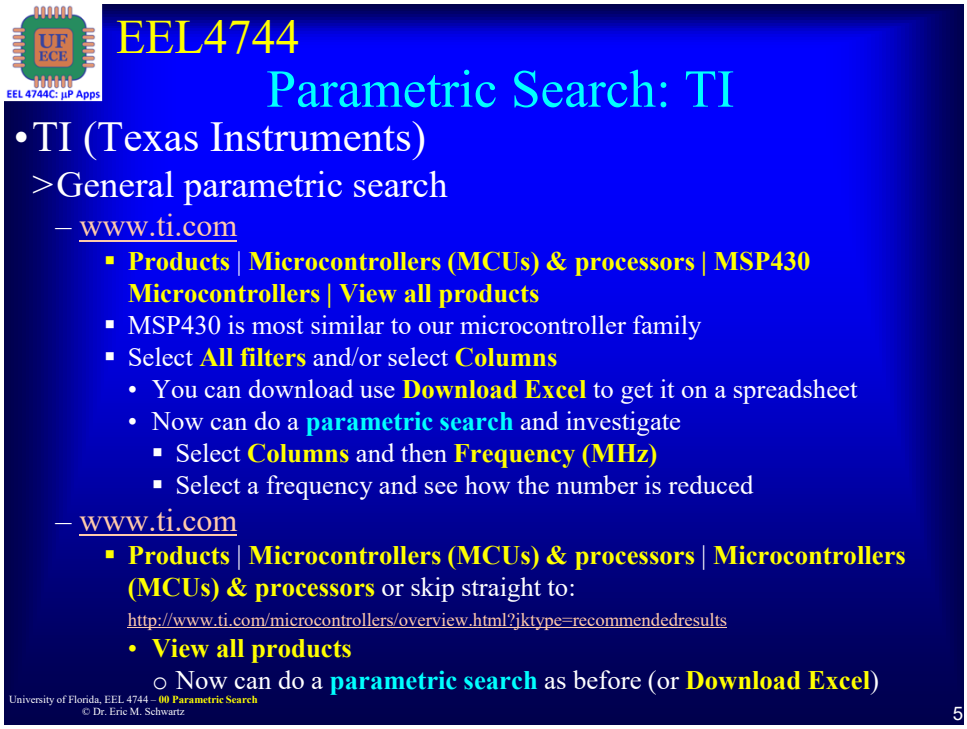
EEL4744
Parametric Search: TI
•TI (Texas Instruments)
>General parametric search
– www.ti.com
▪ Products | Microcontrollers (MCUs) & processors | MSP430 Microcontrollers | View all products
▪ MSP430 is most similar to our microcontroller family
▪ Select All filters and/or select Columns
• You can download use Download Excel to get it on a spreadsheet
• Now can do a parametric search and investigate
▪ Select Columns and then Frequency (MHz)
▪ Select a frequency and see how the number is reduced
– www.ti.com
▪ Products | Microcontrollers (MCUs) & processors | Microcontrollers (MCUs) & processors or skip straight to:
http://www.ti.com/microcontrollers/overview.html?jktype=recommendedresults
• View all products
o Now can do a parametric search as before (or Download Excel)
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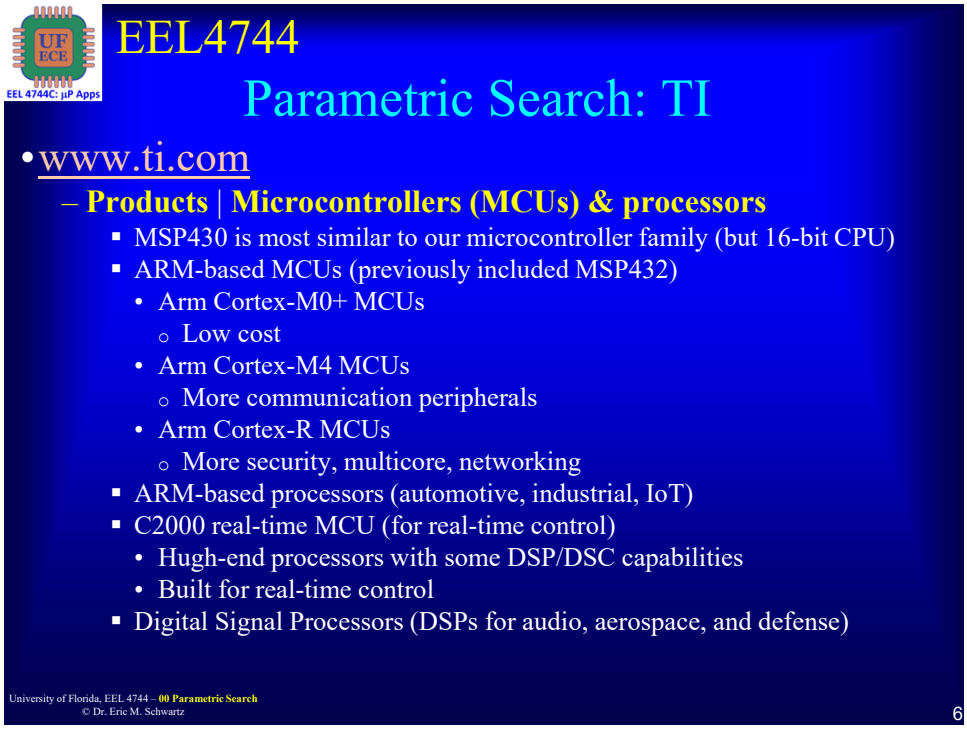
EEL4744
Parametric Search: TI
•www.ti.com
– Products | Microcontrollers (MCUs) & processors
▪ MSP430 is most similar to our microcontroller family (but 16-bit CPU)
▪ ARM-based MCUs (previously included MSP432)
• Arm Cortex-M0+ MCUs
o Low cost
• Arm Cortex-M4 MCUs
o More communication peripherals
• Arm Cortex-R MCUs
o More security, multicore, networking
▪ ARM-based processors (automotive, industrial, IoT)
▪ C2000 real-time MCU (for real-time control)
• Hugh-end processors with some DSP/DSC capabilities
• Built for real-time control
▪ Digital Signal Processors (DSPs for audio, aerospace, and defense)
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