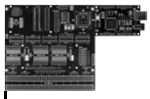
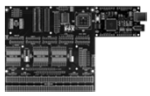


EEL3744: Microprocessor Applications

Welcome to EEL-3744C: *Microprocessor Applications*

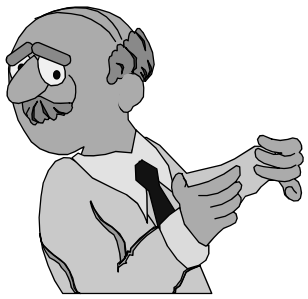
- I'm **Dr. Schwartz** and I'll be teaching the only (supersized) section of 3744 (formerly 4744) this semester.
  - > I'll also be the only one teaching 3744 for the foreseeable future.
- If you want to continue learning from where you left off at the end of EEL 3701, you are in the right class!

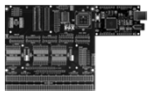


EEL3744: Microprocessor Applications

Who am I?

- Let me tell you about myself



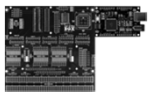


EEL3744: Microprocessor Applications
Menu

(This is the format for the starting slide for every class)

- Philosophy
- Syllabus
- Web-site

See examples on web:
`syl_f16.pdf, schedule.pdf`

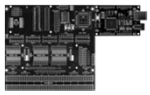


EEL3744: Microprocessor Applications
Philosophy and Syllabus

- Instructor's Philosophy
- Course Philosophy
- Course Introduction and Procedures
  - > Syllabus
    - – Class Organization: Lab times, TA office hours

`syl_f16.pdf`

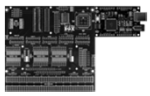
- Our web-site: ***http://mil.ufl.edu/3744/***
- Overview
- Class notes (and updates) available on web (for limited time)



EEL3744: Microprocessor Applications
Teaching Assistants (TAs)

Khaled Hassan Grad student (experienced TA) [3]
Madison Emas Undergrad (experienced TA) [1]
Daniel Gonzalez Undergrad (unexperienced TA) [2]

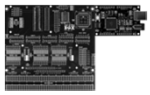
See also web site Faculty/TAs or syllabus



EEL3744: Microprocessor Applications
Schedule, Website

- See **`Schedule`** on web for announcements
- **Our class website**: http://mil.ufl.edu/3744/

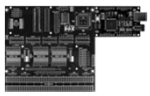
`schedule.pdf`



EEL3744: Microprocessor Applications
Textbook (ISBN: 0195371615)

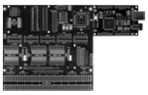
- **Textbook**: F. Cady, *Microcontrollers and Microcomputers Principles of Software and Hardware Engineering*, Second Edition, Oxford University Press, New York, NY, 2009, ISBN13: 9780195371611, ISBN10: 0195371615. This is a **paperback** book.
  > See http://tinyurl.com/3744-ufl
  > You can **share** this book
  > I do **NOT** recommend the ***international edition*** since international editions are often different
  > I recommend that you buy this book **USED** or **RENT** it
  – At Amazon $22 used; $73 new; **$26 rent**
  – At UF bookstore $85 used; $113 new; $46 rent used
  – At chegg.com $64 rent; $73 used; $105 new
  – Campus Books (http://www.campusbooks.com)
  • $26 Used; $77 New; $26 Rent

As of 15Aug16



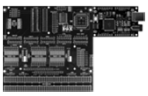
EEL3744: Microprocessor Applications
NI/Digilent Analog Discovery (NAD/DAD) Board

- The **NAD/DAD** board is now required for many UF ECE courses
- See the syllabus for board ordering and pricing info
- The UF bookstore carries the **NAD** ($199) for those that want to use financial aid or want it right away
- I also recommend **NI Multisim**
  > This is electronic circuit simulation and analysis software
  > Depending on how you buy the NAD/DAD, it may be free
  > You are likely to use LTSpice or PSpice in other courses, but NI Multisim is much easier to use with a very nice GUI
- I also recommend the **Analog Parts Kit**
  > This might especially be useful for ECE Design 1 (EEL 3923), as well as those that just want to "play"



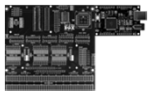
EEL3744: Microprocessor Applications
NI/Digilent Analog Discovery (NAD/DAD) Board

- The **DAD/NAD** tool is now required in **most ECE courses** (see http://tinyurl.com/discov-ufl)
  - > The DAD has the following functions:
    - 2-Channel O'scope (1MΩ, ±25V diff, 5MHz bandwidth, 100Msample/sec)
    - 2-Channel Waveform Generator (22Ω, ±5V, 14 bit, and last 2 above specs)
    - 16-Channel Logic Analyzer and Digital Pattern Generator
    - ±5VDC Power Supplies (+5V at 50mA, -5V at 50mA)
    - Spectrum Analyzer (3.3V CMOS, 100Msample/sec)
    - Network Analyzer (Bode, Nyquist, Nichols; 1Hz-10MHz)
    - Voltmeter (AC, DC, ±25V), Digital I/O
    - Digital Bus Analyzers (SPI, I2C, UART, Parallel)
- We will use it in some of our labs and **DURING** exam 3a



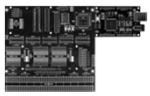
EEL3744: Microprocessor Applications
Manuals and Software

- **Atmel manuals** (from our website and/or Atmel website)
  - >The below manual will be used regularly in the course. A few others will also be used. Download them **ASAP.** The are **FREE!**
    - http://mil.ufl.edu/3744/docs/XMEGA/doc8331_%20XMEGA_AU_Manual.pdf
    - http://mil.ufl.edu/3744/docs/XMEGA/doc8385_ATxmega128A1U_Manual.pdf
    - http://mil.ufl.edu/3744/docs/XMEGA/doc0856_AVR_Instruction_Set.pdf
- **Software**
  - >Atmel Studio 7.0 sp1 (also **FREE**)
    - –An integrated development environment (IDE) for developing and debugging Atmel ARM® Cortex™-M processor-based and Atmel AVR® microcontroller applications (including our XMEGA)
    - –See the Atmel Studio 7.0 sp1 Installation Tutorial at
      - http://mil.ufl.edu/3744/docs/Install_Atmel_Studio_7.0.pdf



EEL3744: Microprocessor Applications
Announcements

- Hardware purchases
  - >Parts paid for with your lab fee ($199.68)
    - –The UF-specified boards designed by *Out of the Box Robotics*
    - –Wire-wrap tool, USB cables, miscellaneous ICs, headers, etc.
  - >NI/Digilent Analog Discovery **[Required]**
  - >**Recommended**: Soldering iron
  - >**Suggested**: Needle-nosed pliers
- Labs start **Mon, 29 Aug**
- You should already have (and will need) a USB Blaster, used to program CPLDs in 3701
  - >This will program your CPLD in 3744
  - >**Some** are now available at UF bookstore ($60)
    - –Get one **ASAP** (since they might run out)
  - >Also available online for less, but …



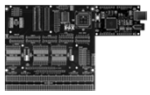
EEL3744: Microprocessor Applications
Announcements

- Class notes (& updates) available on web (for **limited** time)
- Web tour
- Don’t blow it up!
- Doggone it!

syl_f16.pdf

Exploding Parts

Doggone it!



EEL3744: Microprocessor Applications

The End!