

CPE 390: Microprocessor Systems

Spring 2018

Lecture 0

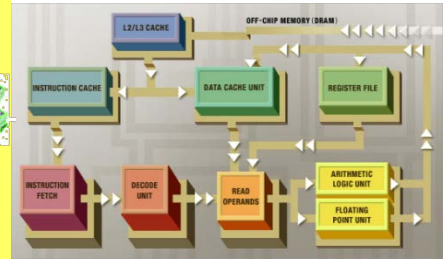
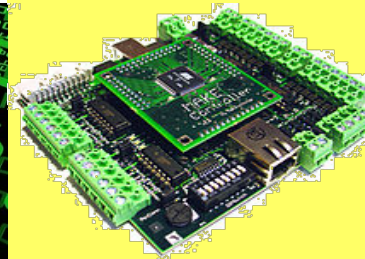
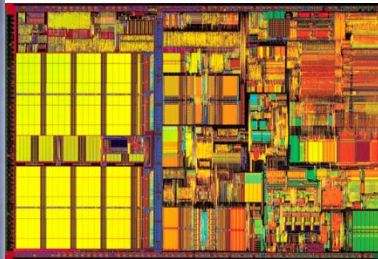
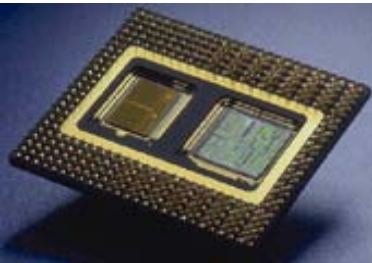
Course Organization & Introduction

Bryan Ackland

Department of Electrical and Computer Engineering

Stevens Institute of Technology

Hoboken, NJ 07030



Course Organization

- Course instructor:

Prof. Bryan Ackland

Office: Burchard 211

Email: backland@stevens.edu

Phone: (201) 216-8096

- Laboratory work:

TA: Laxima Niure Kandel

Office: Burchard 414

Email: Iniureka@stevens.edu

TA: Shuanglu Dai

Office: Burchard 200

Email: sdai1@stevens.edu

- Course web site:

http://personal.stevens.edu/~backland/Courses/Course390_Spring_18.htm

- Will use Canvas for Announcements and Gradebook only

Course Organization

- Course schedule:

Tuesday 3:00 – 4:40 pm: [Burchard 118](#)

Thursday 1:00 – 1:50 pm: [Babbio 122](#)

January 17 – May 3

- Office Hours:

Wednesday 9:30 am – 11:30 am

Thursday 10:00 am – 12:00 noon

Other times by appointment (or just drop by)

Laboratory Course

- Lab schedule:

390LA:	Monday	1:00 pm – 3:30 pm:	Burchard 123 (29)
390LB:	Thursday	9:00 am – 11:30 am:	Burchard 123 (2)
390LC:	Friday	3:00 pm – 5:30 pm:	Burchard 123 (9)
390LD:	Monday	3:00 pm – 5:30 pm:	Burchard 123 (30)

- First Lab. starts in 5th week

- Please email me a list of all (2-hour plus) slots you are available Mon-Fri, 9-6

Grading & Exam Info

- Grading Information

- Attendance (5%)
- Midterm examination (20%)
- Homework (20%)
- Laboratory Assignments (25%)
- Final examination (30%)

Up to 2 grade points will be given to students who participate in class

- Exam times:

Midterm: Tuesday, March 20 @ 3:00 pm

Final: *to be announced*

- Students will be able to use lecture notes & Huang text book during exam

Homeworks

- Students are allowed to discuss assignments and collaborate on best approach to solve problems.
- Once discussion has taken place, each student must individually prepare his/her own assignment submission
- Is it OK to:
 - ask a fellow student for help in understanding how to attack a problem? **YES**
 - get together with a group of 2-3 colleagues and share ideas on how to approach problems? **YES**
 - copy another student's answers? **NO**
 - work with another student(s) to prepare a group solution which each submit independently? **NO**

Textbook & References

Textbook:

HCS12/9S12 An Introduction to Software and Hardware Interfacing, 2nd. edition, Han-Way Huang, Publisher: DelMar Cengage Learning, ISBN: 1-4354-2742-4, 2010

Recommended references:

(1) *Microcontroller Theory and Applications, 2nd. edition*, D. Pack and S. Barrett, Pearson Prentice Hall, ISBN 0-13-615205-8, 2008

(2) *Computers as Components*, W. Wolf, Elsevier, ISBN: 0-12-369459-0, 2005.

Course Objectives & Outline

Outline:

- Microprocessors and Microcontrollers
- CPU, registers, ALU, memories
- Machine code and Assembly Programming
- Data structures
- Subroutines
- Input-Output and Interrupts
- Timers, Serial I/O and A/D Conversion

Goal:

- Understand how microprocessors & programmable hardware really work
 - at the lowest level
- Be able to use microprocessors to quickly design and build efficient embedded systems
 - whether you're programming in C, C++, assembler, Java,... 8

Sources

These lectures notes are based on the following sources:

- [1] *HCS12/9S12 An Introduction to Software and Hardware Interfacing, 2nd. edition*, Han-Way Huang, Publisher: DelMar Cengage Learning, ISBN: 1-4354-2742-4, 2010
- [2] Y. Meng, Microprocessor Systems Lecture Notes
- [4] Y. Zhang, Microprocessor Systems Lecture Notes