

EET 3735 - Microprocessor Architecture and Programming

Fall 2026 Syllabus, Section 01, CRN 42030,

Credit hours: 2

Instructor

Anthony DiTommaso

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Public Instructor Information

Instructor Title:

Instructor Professional Qualifications:

Experienced embedded system designer with over 30 years in mixed signal design including assembly, C, VHDL, PCB design, EMC testing, and regulatory approvals.

MSECE, Electrical and Computer Engineering, Carnegie Mellon University, 1997

BSEE, Electrical Engineering, Carnegie Mellon University, 1993

Instructor Office Location: Moser Hall - 4120

Instructor Office Phone: (330) 941 - 3287

Course Description

3735. Microprocessor Architecture and Programming. An introduction to microprocessor architecture, memory organization, and input/output addressing. Emphasis on machine/assembly language programming to teach concepts of buses, machine cycles, and internal data flow. Two hours lecture per week. Prereq.: "C" or better in CSIS 1590, or in EET 1501 and EET 1501L and EET 2620 and EET 2620L; "C" or better in either MATH 1513, or in either MATH 1510 or MATH 1510C and in either MATH 1511 or MATH 1511C. Coreq.: EET 3735L. 2 s.h.

Course Readings

Group	Title	Author	ISBN
Required	ATTINY104 Data Sheet		
Required	Microchip ATTINY104 XPLAINED NANO		
Required	Microchip Studio 7.0.25		
Required	Computer System Architecture (Third Edition)	Mano	ISBN 0-13-175563-3
Required	Embedded Controllers Using C and Arduino	Fiore	
Optional	The C Programming Language (Second Edition), ISBN ,	Kernighan, Ritchie	978-01-3110362-7

1. ATTINY104 Data Sheet https://www.microchip.com/content/dam/mchp/documents/OTH/ProductDocuments/DataSheets/Atmel-42505-8-bit-AVR-Microcontrollers-ATtiny102-ATtiny104_Datasheet.pdf
2. Microchip ATTINY104 XPLAINED NANO - https://ww1.microchip.com/downloads/en/DeviceDoc/Atmel-42671-ATtiny104-Xplained-Nano_User-Guide.pdf
3. Microchip Studio 7.0.25 - <https://www.microchip.com/en-us/development-tools-tools-and-software/microchip-studio-for-avr-and-sam-devices>
4. Computer System Architecture (Third Edition) ISBN 0-13-175563-3, Prentice-Hall (Pearson)/ISBN 978-93-325-8560-7 PersonIN
5. Embedded Controllers Using C and Arduino, <https://www2.mvcc.edu/users/faculty/jfiore/Micro/EmbeddedControllers.pdf>

The course readings are subject to change in the event of extenuating circumstances, research developments, current events, and/or to ensure better learning.



Course Calendar

Day	Date	Reading(s)	Proposed Topic	Due/To Prepare for Class
Mon	8/24	Computer System Architecture (Third Edition) Preface, CH1-1	Lecture Introduction	
Mon	8/31	Computer System Architecture (Third Edition) CH1-2, CH1-3, CH3-2	Digital Logic	
Mon	9/7	Computer System Architecture (Third Edition) CH2, CH3, CH4	No Class - Labor Day	(M) HW#1 (W) Lab#1P1
Mon	9/14	Computer System Architecture (Third Edition) CH1-4, CH1-5, CH1-6, CH2, CH3	Digital Components	(M) HW#2 (W) Lab#2P1
Mon	9/21	Computer System Architecture (Third Edition) CH4	Micro-operations	(M) HW#3 (W) Lab#3P1
Mon	9/28	Computer System Architecture (Third Edition) CH5	Instruction Architecture	(M) HW#4 (W) Lab#4P1
Mon	10/5	Computer System Architecture (Third Edition) CH6	Basic Computer	(M) HW#5 (W) Lab#5P1
Mon	10/12		Exam #1	
Mon	10/19	Embedded Controllers Using C and Arduino CH1, CH4.5	Concepts in C	
Mon	10/26	Embedded Controllers Using C and Arduino CH3.2, CH4.4	Types and Operators	(M) HW#6 (W) Lab#6P1
Mon	11/2	Embedded Controllers Using C and Arduino CH6	Control Flow	(M) HW#7 (W) Lab#7P1
Mon	11/9	Embedded Controllers Using C and Arduino CH3.3, CH8.2, CH10.2, CH10.3	Functions, Pointers	(M) HW#8 (W) Lab#8P1
Mon	11/16		Mixing C and Assembly	(M) HW#9 (W) Lab#9P1
Mon	11/23		Exam #2	(M) HW#10
Mon	11/30		Lab #10 – Mash-Up Presentation	(M) Lab#10P1
Mon	12/7		Final Exam 5:30 – 7:30 PM	

The course schedule, policies, procedures, and assignments in this course are subject to change in the event of extenuating circumstances, by mutual agreement, and/or to ensure better learning.