Comparison of Requirements for the Computer Engineering Major and the Computer Science Major

(For freshmen starting in Fall 2007 or later)

Subject	*Required by Both Programs*	*Computer Engineering (School of Engineering)* 187 units minimum	*Computer Science (College of Arts & Sciences)* 175 units minimum
University Core Requirements (Humanities)	English 1 & 2, United States, Social Science, World Cultures I, Western Culture I & II, Ethics, Religious Studies I, II, III	Introduction to Technical Writing for Engineers	1 additional writing course (MATH 100 recommended)
College Requirements		Intro. to Engineering, Electric Circuits I, Senior Thesis Project (COEN 194, 195, 196 [2 units ea.])	World Cultures II, Fine Arts, Ethnic or Women's Studies, Foreign Lang. I & II
Mathematics	Calculus I – IV, Differential Equations	Discrete Math, Linear Algebra (or Num. Methods), Probability & Statistics	Abstract Algebra, Linear Algebra, 2 upper div. "pure" Math courses (Prob. & Stats. recommended)
Natural Sciences	Physics I & II	Physics III, Chemistry I	
Lower Division Computing	Computer Org. & Embedded Systems Prog. (COEN 20), Intro. to Logic Design (COEN 21).	[Intro. to Prog. (COEN 10)], Adv. Prog. (COEN 11), Data Types & Struct. (COEN 12), Formal Spec. & Adv. Data Struct. (COEN 70)	Intro. to Comp. Sci. (CSCI 10), Obj. Orient. Prog. (CSCI 60), Data Structures (CSCI 61)
Upper Division Computing	Operating Systems (COEN 177), Th. of Algorithms (CSCI 163 or COEN 179 [cross-listed])	Computer Arch. (COEN 122), Comp. Networks (COEN 146) Software Engin. (COEN 174), Form. Lang. & Compilers (COEN 175)	Th. of Automata & Lang. (CSCI 161) *or* Numerical Analysis (CSCI 166)
Upper Division Computing Electives		3 COEN Electives	4 Computing Electives as follows:† • 1 from COEN, • 2 from CS courses in Math, • 1 from either
Other		Electronic Circuits (ELEN 115), Integ. Circ. Design (ELEC 153), Integrated Ed. Req. *(See Bulletin for info.)*	

† CS Majors are recommended to choose elective courses in one of four tracks: Numerical Computation, Software, Foundations, Graduate School Preparation.

DISCLAIMER: *This table merely attempts to provide an overview comparing and contrasting the requirements of the majors. It is not meant to be an official document prescribing all requirements. For details, one should consult the most recent edition of the Undergraduate Bulletin.*

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