University of Nebraska Lincoln

Pioneering new frontiers.

Bachelor of Science in Computer Science

Advising Brochure

for 2007 - 2008

Department of
Computer Science & Engineering
College of Arts & Sciences

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Computer Science Major Requirements

Computer Science & Engineering Courses:

up to 6 hrs P/N with permission and
at least 13 hrs of 400 level CSCE (if not in JDEP)

	Course	Title	JDEP	Hrs
	CSCE 155	Introduction to Comp Sci I	183	4
	CSCE 156	Introduction to Comp sci II	184	4
IS	CSCE 230	Computer Organization	284	4
	CSCE 230L	Computer Organization Lab	(284)	1
	CSCE 235	Introduction to Discrete Struct	(283)	3
	CSCE 251	Unix Programming		1
IS	CSCE 310	Data Structures & Algos	283	3
	CSCE 322	Programming Lang Concepts		3
IS	CSCE 361	Intro to Software Engineering	383	3
	CSCE 486	CS Professional Development	381&2	1
IS	CSCE 487	CS Senior Design Project	402	3
	CSCE 351 or 451	OS Kernels or OS Principles		3
	CSCE 423 or 428	Des & An Algos or Automata		3
	CSCE 3/4 ___	*Technical Elective*	301	3
	CSCE 3/4 ___	*Technical Elective*	302	3
	CSCE 3/4 ___	*Technical Elective*	401	3
			384	___
				44

Mathematics Courses:

IS	MATH 106	Analytic Geom & Calculus I	5
IS	MATH 107	Analytic Geom & Calculus II	5
IS	MATH 314	Linear Alg (Matrix Theory)	3
	STAT 380	Statistics & Applications	3
			___
			16

Natural Science Courses: 12

Must include two labs (**bold face**) from one area. Choose from the following areas:

- CHEM **109**(*IS*), **110**, **221** or CHEM **113**(*IS*), 114/**116**
- PHYS 211/**221**, 212/**222**, 213/**223**, ASTR 204/**224**
- BIOS 102(*IS*), **103**, **109***IS*, **111**, 112/**112L**, 206/**112L**, 206/**205**, **207**(*IS*)
- GEOL **101**, **103**, **210**, 212
- METR **200**(*IS*), 255(*IS*), 351(*IS*)
- ANTH 242/**242L**(*IS*)

CSCE Technical Electives

See page 5 for 496 Special Topics and MATH Selections

Informatics focus options:			
	410	Information Retrieval Systems	se
	413	Database Systems	f
	464	Internet Systems & Programming	s
	470	Computer Graphics	s
	472	Digital Image Processing	f
	473	Computer Vision	so
	474	Data Mining	s
Artificial Intelligence focus options:			
	421	Foundations of Constraint Sat Theory	fo
IS	475	Multiagent Systems	fo
IS	476	Artificial Intelligence	f
IS	478	Machine Learning	fe
	479	Neural Networks	?
Networking & High-End Computing:			
⋆	430	Computer Architecture	fs
	432	High-Performance Processor Architectures	fo
	434	VLSI Design	fo
	435	Cluster & Grid Computing	?
	455	Distributed Operatings Systems	fe
	456	Parallel Algorithms & Programming	fo
	462	Communication Networks	s
Foundations focus options:			
⋆	340	Numerical Analysis	fs
	421	Foundations of Constraint Sat Theory	fo
IS	423	Design & Analysis of Algorithms	s
	424	Computational Complexity Theory	se
	428	Automata, Computation, & Formal Languages	f
	477	Cryptography & Computer Security	f
Additional Choices:			
	351	Operating System Kernels	f
IS	378	Human Computer Interaction	s
	399H	Honors Thesis	fssu
	425	Compiler Construction	f
⋆	451	Operating System Principles	s
	457	Systems Administration	f
	491 & 498	Internship & Computer Problems	fssu

⋆ **Deficiencies for the graduate program!**

Computer Science Degree Requirements

I. Major Area of Study:

Computer Science (C or higher required in CSCE)	44
Mathematics	16
Natural Science	12
Focus (optional)	9

The focus is earned by taking 3 courses in any one area (see page 3) in addition to all other major requirements.

II. Minor Area of Study:

Only MATH 208 is needed for a Mathematics minor. A second minor is suggested.

III. Essential Studies:

Max of 9 hrs in any one department for CEFGH. See http://ascweb.unl.edu/advise.html for more details.

A.	English Composition (both are *IS*)	6
B.	Mathematics (included in the major)	–
C.	Social Sciences (Department 1)	3
	Social Sciences (Department 2)	3
D.	Natural Sciences (included in the major)	–
E.	History	3
F.	Humanities	3
G.	Fine Arts	3
H.	Ethnicity & Gender	3
I.	Foreign Language	0-16 $\star$
	Library	1
	Additional C,E,F, or G	3
	Additional C,E,F,G or crosslisted H	3?

$\star$ Must get through 202 **or** 4 years H.S. **or** have English as a second language.

IV. Integrative Studies: (indicated by *IS* label)

10 courses, one each at 200, 300, and 400 levels, prorated for transferees, max of 3 per department, major has 8 built in.

Total hours for graduation: 125, of which typically 72 are in the major, 4 in the Math minor, and 28–44 in the Essential Studies, leaving 5–21 as pure electives.

Recent CSCE 496 Special Topics Electives

Title	Focus Area
Biometrics	Informatics
Data and Network Security	Networking & High End
Embedded Systems	Networking & High End
Performance Analysis of O-O Systems	Networking & High End
Semantic Web Technologies	Informatics
Steganography	Informatics

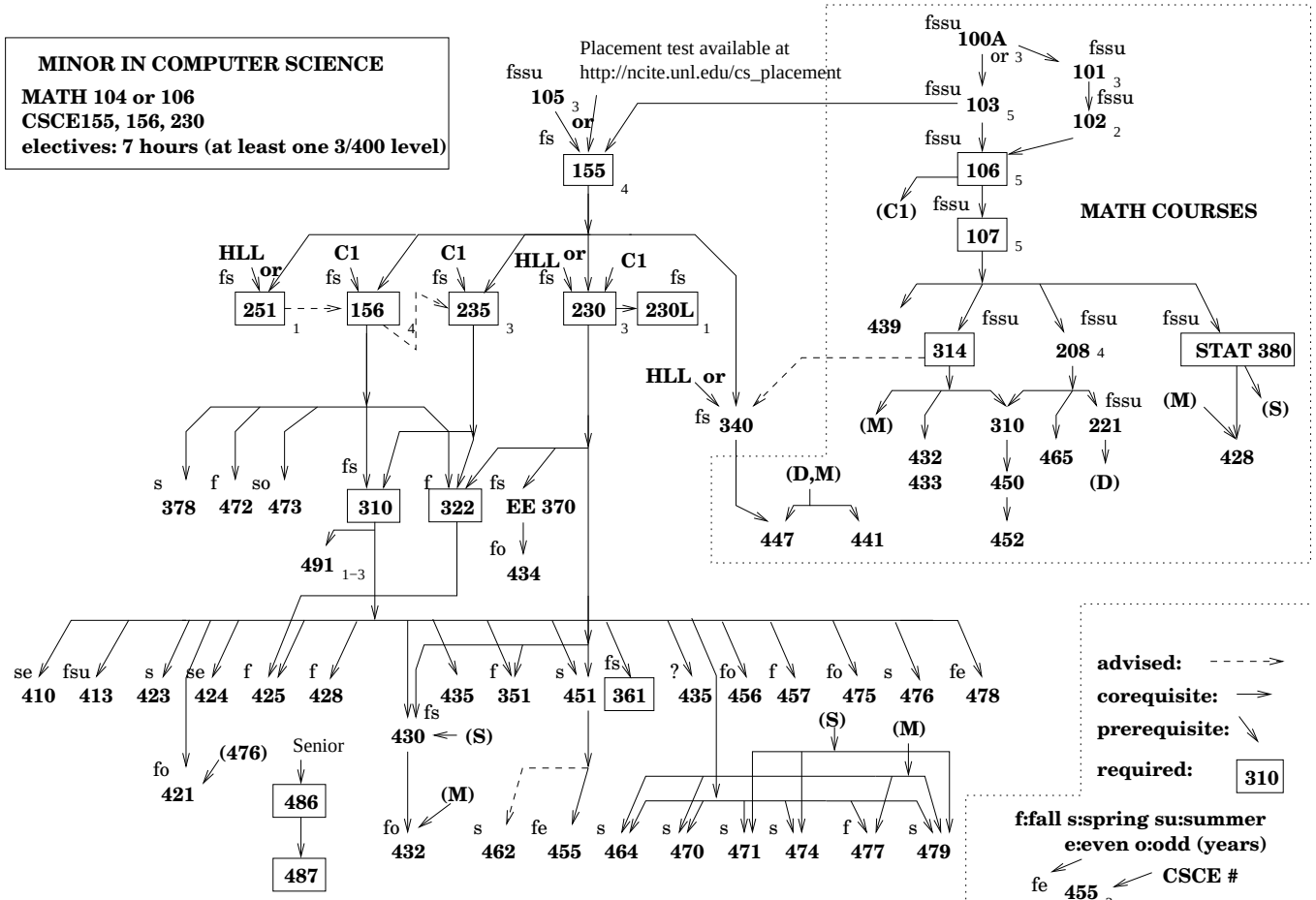
Math Courses as Technical Electives

MATH 428	Principles of Operations Research (*IS*)	s
MATH 432	Linear Optimization	fe (*IS*)
MATH 433	Nonlinear Optimization	so
MATH 439	Math Models in Biology	s?
MATH 441	Approximation of Functions	f?
MATH 447	Numerical Analysis II	f
MATH 450	Combinatorics	fo
MATH 452	Graph Theory	se

Typical Eight Semester Schedule

Fall 1				Spring 1			
CSCE	155	CS I	4	CSCE	156	CS II	4
CSCE	251	Unix	1	CSCE	230	Comp Org	3
MATH	106	Calc I	5	CSCE	230L	Lab	1
ENGL	150	Comp I	3	MATH	107	Calc II	5
LIBR	110	Lib Sci	1	Lang	201	Language	3
			14				16
Fall 2				**Spring 2**			
CSCE	235	Discrete	3	CSCE	310	Algos	3
MATH	314	Matrix	3	STAT	380	Stats	3
ENGL	151	Comp II	3	NatSci		(with lab)	4
NatSci		(with lab)	4	LibArt		#1	3
Lang	202	Language	3	Elect		(minor?)	3
			16				16
Fall 3				**Spring 3**			
CSCE	322	Lang Conc	3	CSCE	3/4XX	elective	3
CSCE	361	Soft Engr	3	CSCE	3/4XX	elective	3
NatSci			4	LibArt		#3	3
LibArt		#2	3	LibArt		#4	3
Elect		(minor?)	3	Elect		(minor?)	4
			16				16
Fall 4				**Spring 4**			
CSCE	4XX	(theory)	3	CSCE	4XX	(systems)	3
CSCE	3/4XX	elective	3	CSCE	487	CS Sen Des	3
CSCE	486	CS Prof	1	LibArt		#6	3
LibArt		#5	3	LibArt		#7	3
Elect		(focus?)	3	Elect		(focus?)	3
Elect		(focus?)	3				15
			16				

For assistance with general college requirements, contact the
Arts & Sciences Advising Center, 107 Oldfather Hall, 472-4190,
http://ascweb.unl.edu/advise.html



COMPUTER SCIENCE PROGRAM

Computer Science & Engineering and Supporting Courses

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