	CS 5000	3	
Mathematical Structures for Computer Science	Undergraduate Calculus course recommended	3	

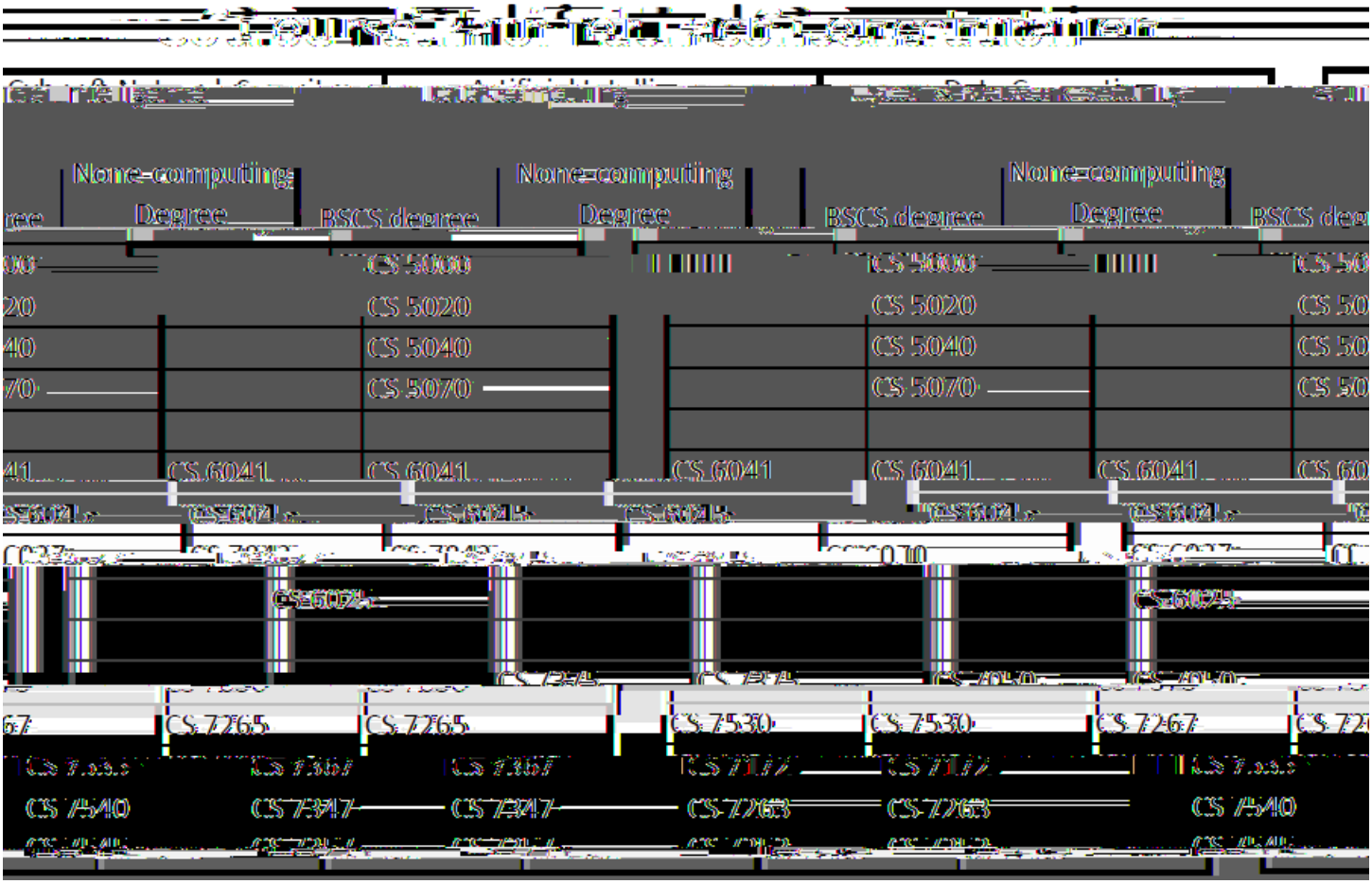
CS 6041 Theory of Computation	CS 5070 CS 5040	3	
Cs 6045 Advanced Algorithms	CS 5040 and CS 5070	3	

A) : Student must complete 24 credit hours from Major Elective list. Students can select one concentration area and complete its requirements or have the option to select courses from the CS Major Elective lists. At least 18 credit hours must be from 7000-level or higher, excluding CS 7998 and CS 7999.

B) Students must complete 6 hours thesis (CS 7999), 3 hours research (CS 7998). In addition, student must complete 15 credit hours from Major Elective list. Students can select one concentration area and complete its requirements or have the option to select courses from the Major Electives list. At least 12 credit hours must be from 7000-level or higher. Students choose this model should work with a faculty thesis advisor. Thesis needs to be defended and approved by a thesis committee that consists of at least 3 members.

Artificial Intelligence	CS 6045	3	
Machine Learning	CS 6045	3	
Machine Vision	CS 6045	3	
Natural Language Processing	CS 6041 and CS 7843	3	
Neural Networks and Deep Learning	CS 6045	3	
Special Topics in Computer Science in *Concentration*	Varies	3	

Data Warehousing and Mining	CS 6070 or BSCS degree CS 6045	3	
Information Retrieval	CS 6041 and CS 6045	3	
Big Data Analytics	CS 6045	3	
Parallel and Distributed Computing	CS 6025 or BSCS degree	3	
Graph Algorithms	CS 6041 and CS 6045	3	
Special Topics in Computer Science in *Concentration*	Varies	3	


None-computing Degree
BSCS degree
None-computing Degree
BSCS degree
None-computing Degree
BSCS degree
CS 5000
CS 5020
CS 5040
CS 5070
CS 6041
CS 7265
CS 7265
CS 7530
CS 7530
CS 7267
CS 7540
CS 7540