

School	School of Arts & Science
Major	Masters of Science in Computer Science

Core Requirements			
Code	Title	Credits	Description
CSCI510	Design and Analysis of Algorithm	3	The aim of the course is to provide the students with more understanding of algorithms, data structures and time complexity. The course concentrates on the fundamental and advanced techniques used to design and analyze efficient algorithms including greedy algorithms, divide and conquer dynamic algorithms, graph techniques, probabilistic algorithms and parallel algorithms. The design techniques employed are illustrated and presented using real-life applications
CSCI513	Advanced Database Systems	3	This course presents advanced concepts in database systems. First, we present a quick overview of relational DBMS. Second, we will discuss advanced data management concepts (PL/SQL, control structures, cursors, triggers,). Then, we will discuss fundamental notions of distributed database design (e.g. global directory issues, query processing) in large scale environment (e.g. Grid and Peer-to-Peer). We will focus on the very hot problem of query optimization by discussing the current approaches in this field. Finally, we will present the main concepts for transaction, concurrency control and database recovery techniques.
CSCI515	Computer Ethics	3	To teach students about social, legal, philosophical, political, constitutional, and economical issues related to computers and to prepare students for careers in computer science and other fields who are interested in issues that arise from computer technology. The course focuses on ethical issues that student might face directly as a computer professional, in addition to social, political, and legal issues related to computers. Students are required to prepare a term paper and oral presentations. Many exercises are to be discussed in class.
CSCI595	Special Graduate Skills	1	The aim of the course is to master technical writing for proposals, technical presentations, Students will learn how to clearly communicate technical ideas to any audience—technical or nontechnical—and motivate them to act. The course will go over many examples plus instructions for writing exactly the kinds of documents needed
CSCI511	Distributed Operating Systems	3	To provide an in-depth examination of the principles of distributed systems in general and to understand the fundamental concepts and design principles of a technology that is growing as one of the newest areas in computer science. Students will understand the fundamental concepts of distributed operating system components. A set of case studies are presented to the students to provide real-world insights into four distributed operating systems.

CSCI512	Information Retrieval	3	To enable students to understand web search engines and research retrieval engines. This course examines the functional components of information retrieval including document and query representation, indexing techniques, similarity and matching, retrieval models, evaluation techniques, implementation issues, query reformulation (relevance feedback), Space models and space reduction. We will look both at web search engines and a research retrieval engine. Students will develop projects in some area of information retrieval.
CSCI514	Advanced Computer Networks	3	To provide more understanding of technologies that makes the Internet work. A clear discussion of fundamentals with the latest technologies is given with a new focus on CIDR addressing, Routing Architecture, Routing between Peers, and Routing within an Autonomous System. Students will learn also Internet Multicasting, IP Switching and MPLS in addition to the new technologies used in the networking such as Mobile IP

<b>Major Requirements</b>			
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CSCI598	Project	3	The course enables students to develop and implement a project. The student will learn how to organize the project in a timely way so that it will meet the expected deadlines and be able to submit projects prepared according to professionally accepted standards.