CSE 674 – Advanced Data Structures and Algorithms – Syllabus

TuTh 11:00-12:20 Maxwell Hall 110

Instructor	Mehmet Kaya, Ph.D.	E-mail	mkaya@syr.edu
Office Location	CST 3-125	Office Hours	Fridays 9.30-11.30AM
TA	Hongjia Li	TA Office Hours and Location	TBD

Course Format

- **Topic**: Survey of practical data structures and algorithms used in industrial software design.

- **Textbook:** Adam Drozdek, "Data Structures and Algorithms in C++", Fourth Edition.

- **Supplemental Textbooks:**

  o Robert Sedgewick, "Algorithms in C++, Parts 1-4."

  o Bjarne Stroustrup, "The C++ Programming Language, 4th Edition"

  o Mark Allen Weiss, "Data Structures and Algorithms in C++", Fourth Edition

- **Recommended Prerequisite:** Some coding experience with C++.

Grading

Item	Count (Tentative)	%
Homeworks	5	40
Quizzes	6	20
Exams	2	40

Grades*	Grade points / credit*	Percentage Range	Total Points
A	**4.0**		
A-	**3.66**		
B+	**3.33**		
B	**3.0**		
B-	**2.66**		
C+	**2.33**		
C	**2.0**		
C-	**1.66**		
D[1]	**1.0**		
D-[1,2]	**0.66**		
F	**0**		

Academic Integrity Policy

Syracuse University's academic integrity policy reflects the high value that we, as a university community, place on honesty in academic work. The policy defines our expectations for academic honesty and holds students accountable for the integrity of all work they submit. Students should understand that it is their responsibility to learn about course-specific expectations, as well as about university-wide academic integrity expectations. The university policy governs appropriate citation and use of sources, the integrity of work submitted in exams and assignments, and the veracity of signatures on attendance sheets and other verification of participation in class activities. The policy also prohibits students from submitting the same written work in more than one class without receiving written authorization in advance from both instructors. The presumptive penalty for a first instance of academic dishonesty by an undergraduate student is course failure, accompanied by a transcript notation indicating that the failure resulted from a violation of academic integrity policy. The presumptive penalty for a first instance of academic dishonesty by a graduate student is suspension or expulsion. SU students are required to read an online summary of the university's academic integrity expectations and provide an electronic signature agreeing to abide by them twice a year during pre-term check-in on MySlice. For more information and the complete policy, see http://academicintegrity.syr.edu/.

Tentative Weekly Schedule:

Lecture	Topic
#1	Complexity Analysis
#2	Elementary Data Structures: Linked Lists
#3	Elementary Data Structures: Stacks and Queues
#4	Hashing
#5	Sorting Algorithms 1
#6	Sorting Algorithms 2
#7	Binary Trees 1
#8	Binary Trees 2
#9	Binary Trees 3
#10	Multiway Trees 1
#11	Multiway Trees 2
#12	Graphs 1
#13	Graphs 2
#14	Graphs 3
#15	Data Compression
#16	String Matching 1
#17	String Matching 2
#18	Memory Management
#19	Algorithm Design Techniques 1
#20	Algorithm Design Techniques 2
#21	Special Purpose Data Structures
#22	Special Purpose Data Structures
#23	Parallel algorithms 1
#24	Parallel algorithms 2