

**ARKANSAS STATE UNIVERSITY  
COLLEGE OF ENGINEERING AND COMPUTER SCIENCE**

**NAME:** \_\_\_\_\_  
**STUDENT ID:** \_\_\_\_\_

**DEGREE AND MAJOR:**           M. S., COMPUTER SCIENCE            
**EMPHASIS:** \_\_\_\_\_

**CATALOG YEAR:** **2020 - 2021**  
**revised:** **06/17/20**

SEMESTER    GRADE

**CORE REQUIREMENTS: 9-21 hours**

**Compilers or Automata Theory (one of next two)**

CS 5133: Compilers \_\_\_\_\_  
CS 5723: Automata Theory \_\_\_\_\_

**Computer Systems (one of next four)**

CS 5313: Computer Networks \_\_\_\_\_  
CS 6213: Parallel Processing \_\_\_\_\_  
CS 6243: Distributed Systems \_\_\_\_\_  
CS 6253: Heterogeneous Computing \_\_\_\_\_

**Algorithms (one of next one)**

CS 5713: Analysis of Algorithms \_\_\_\_\_

**ELECTIVES : 6-24 hours (Total 33 hrs including core courses)**

CS 5113: Software Engineering \_\_\_\_\_  
CS 5223: UNIX Systems Programming \_\_\_\_\_  
CS 5413: Fundamental Computer Graphics \_\_\_\_\_  
CS 5423: Interactive Computer Graphics \_\_\_\_\_  
CS 5433: Artificial Intelligence \_\_\_\_\_  
CS 5543: Database Systems \_\_\_\_\_  
CS 5613: Mobile Application Development \_\_\_\_\_  
CS 5623: Fundamentals of Data Science \_\_\_\_\_  
CS 5823: Scripting Languages \_\_\_\_\_  
CS 583V: Internship (not counted towards degree) \_\_\_\_\_  
CS 6123: Software Security \_\_\_\_\_  
CS 6223: Advanced Computer Architecture \_\_\_\_\_  
CS 6233: Operating System Design \_\_\_\_\_  
CS 6263: Cloud Computing \_\_\_\_\_  
CS 6313: Data Security \_\_\_\_\_  
CS 6323: Computer Security \_\_\_\_\_  
CS 6333: Network and Internet Security \_\_\_\_\_  
CS 6343: Cloud Security \_\_\_\_\_  
CS 6353: Hardware Security \_\_\_\_\_  
CS 6413: Solid Modeling \_\_\_\_\_  
CS 6423: Robotic Software Control \_\_\_\_\_  
CS 6443: Machine Learning \_\_\_\_\_  
CS 6463: Image Processing \_\_\_\_\_  
CS 6523: Data Mining Techniques \_\_\_\_\_  
CS 6543: Adv. Database Systems \_\_\_\_\_  
CS 6613: Bioinformatics \_\_\_\_\_  
CS 6713: Advanced Analysis of Algorithms \_\_\_\_\_  
CS 6723: Computability Theory \_\_\_\_\_  
CS 6823: ST - Computer & Network Security \_\_\_\_\_  
CS 6823: ST - Operational Research \_\_\_\_\_  
CS 6813: Seminar in Computer Science \_\_\_\_\_  
CS 688V: Independent Study \_\_\_\_\_  
CS 689V: Thesis \_\_\_\_\_

**UNDERGRADUATE DEFICIENCIES**

Required deficiencies bring M. S. candidate to level of B. S. degree graduate.

No 6000-level courses for credit until all deficiencies circled below have been completed.

**Computer Science:**

three of next three  
CS 2114: Structured Programming \_\_\_\_\_  
CS 2124: OOP & Fund Data Structures \_\_\_\_\_  
CS 3113: Algorithms & Adv Data Structures \_\_\_\_\_  
or three of next three  
CS 5012: Acc Structured Programming \_\_\_\_\_  
CS 5022: Acc OOP & Fund Data Structures \_\_\_\_\_  
CS 5032: Acc Algorithms & Adv Data Struct \_\_\_\_\_  
and  
CS 3223: Computer Organization \_\_\_\_\_  
CS 3233: Operating Systems \_\_\_\_\_

**Mathematics and Statistics:**

MATH 2183: Discrete Structures \_\_\_\_\_  
MATH 2204: Calculus I \_\_\_\_\_  
MATH 2214: Calculus II \_\_\_\_\_  
STAT 3233: Applied Statistics I \_\_\_\_\_

**GRADUATION CHECK LIST**

Undergraduate deficiencies \_\_\_\_\_  
18 hours of 6000 level coursework \_\_\_\_\_  
33 hours for degree \_\_\_\_\_  
3.00 average overall \_\_\_\_\_  
3.00 average in major \_\_\_\_\_  
Comprehensive exam \_\_\_\_\_  
Emphasis in \_\_\_\_\_  
(next page for details)

**Current Enrollment:**

1 \_\_\_\_\_  
2 \_\_\_\_\_  
3 \_\_\_\_\_  
4 \_\_\_\_\_

The above named student has met all requirements for graduation providing he/she satisfactorily completes the courses of current enrollment.

Advisor \_\_\_\_\_ Date \_\_\_\_\_

Chair of Computer Science \_\_\_\_\_ Date \_\_\_\_\_

Dean of College of Engineering & Computer Science \_\_\_\_\_ Date \_\_\_\_\_

**Note:**

A minimum of thirty-three hours are required for this degree, eighteen of which must be 6000 level coursework.  
Selections may include up to 6 hrs. MATH/STAT, w/ prior approval.

An emphasis can be added into student's M.S. degree if the requirements for the corresponding emphasis are met.

**EMPHASIS IN CYBER SECURITY (12 hours)**

**Required courses: three of next four**

- CS 6123: Software Security \_\_\_\_\_
- CS 6313: Data Security \_\_\_\_\_
- CS 6323: Computer Security \_\_\_\_\_
- CS 6333: Network and Internet Security \_\_\_\_\_

**Elective courses:**

- CS 6343: Cloud Security \_\_\_\_\_
- CS 6353: Hardware Security \_\_\_\_\_
- LAW 6033: Cyberlaw and E-Commerce \_\_\_\_\_

**EMPHASIS IN DATA SCIENCE (12 hours)**

**Required courses: three of next four**

- CS 5543: Database Systems \_\_\_\_\_
- CS 5623: Fundamentals of Data Science \_\_\_\_\_
- CS 6443: Machine Learning \_\_\_\_\_
- CS 6523: Data Mining Techniques \_\_\_\_\_

**Elective courses:**

- CS 6543: Advanced Database Systems \_\_\_\_\_
- STAT 6433: Time Series Analysis \_\_\_\_\_
- STAT 6643: Multivariate Analysis \_\_\_\_\_
- STAT 6653: Data Analysis I: Regress. Analy. \_\_\_\_\_
- STAT 6663: Data Analysis II: Analy. of Var. \_\_\_\_\_

**EMPHASIS IN HIGH PERFORMANCE COMPUTING (12 hours)**

**Required courses: three of next four**

- CS 6213: Parallel Processing \_\_\_\_\_
- CS 6243: Heterogeneous Computing \_\_\_\_\_
- CS 6253: Distributed Systems \_\_\_\_\_
- CS 6263: Cloud Computing \_\_\_\_\_

**Elective courses:**

- CS 5223: Unix Systems Programming \_\_\_\_\_
- CS 6223: Advanced Computer Architecture \_\_\_\_\_
- CS 6233: Operating System Design \_\_\_\_\_