

**University of Arkansas - Fort Smith**  
**5210 Grand Avenue**  
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## **General Syllabus**

### **CS 3223 Routing and Switching**

Credit Hours: 3

Lecture Hours: 3

Laboratory hours: 0

Prerequisite: CS 1033 Foundations of Operating Systems I and CS 1063 Foundations of Operating Systems II

Effective Catalog: 2018-2019

#### **I. Course Information**

##### **A. Catalog Description**

Examines network routing and switching concepts and their methods of implementation, including routed and routing protocols, router and switch configuration, router and switch security, access control lists (ACLs), and virtual local area networks (VLANs).

#### **II. Student Learning Outcomes**

##### **A. Subject Matter**

Upon successful completion of this course, the student will be able to:

1. Evaluate and explain routing concepts as implemented in a network.
2. Evaluate and explain switching concepts as implemented in a network.
3. Explain basic security concepts as implemented in routers and switches.
4. Design, configure, and troubleshoot networks using routers and switches.

##### **B. University Learning Outcomes**

This course enhances student abilities in the following area:

###### **Analytical Skills**

**Critical Thinking Skills:** Students will identify routing and switching problems, break the problems down into component parts, develop, implement, and troubleshoot a solution.

### **III. Major Course Topics**

- A. Routing and packet forwarding
- B. Static routing
- C. Dynamic routing protocols
- D. IP addressing
- E. Local Area Network design
- F. Basic switch concepts and configuration
- G. VLANs
- H. Spanning Tree Protocol (STP)
- I. Inter-VLAN routing
- J. Access Control Lists and introduction to network security