**ABET Course Syllabus – CS4471**

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| **Code** | CS4471 | **Credits** | 3 |
| **Title** | Computer Networking Protocols | **Coordinator** | Zilong Ye |

**Course Information**

1. **Catalog Description:** Network topology, architecture, and related software. Topics covered include designing a LAN and an internetwork, developing access lists, configuring routing protocols, customize switch configurations and manage device configurations
2. **Prerequisites:** CS4440.
3. **Contact Hours:** Lecture 3 hours/week
4. **Required/Elective:** This course is an elective in the BS program.

**Textbook**

CCNA Routing and Switching Study Guide: Exams 100-101, 200-101, and 200-120 1st Edition, by Todd Lammel

**Course Goals**

The Student Learning Outcomes that are addressed by the course are:

* SLO 1. Students will be able to apply concepts and techniques from computing and mathematics to both theoretical and practical problems.
* SLO 4. Students will have a fundamental understanding of computer systems.
* SLO 5. Students will have the training to analyze problems and identify and define the computing requirements appropriate to their solutions.
* SLO 6. Students will have the training to design, implement, and evaluate large software systems working both individually and collaboratively.

Other outcomes of instruction:

At the end of the course, students are able to

* Describe various computer networking protocols;
* Interpret easy subnetting and variable length subnetting;
* Demonstrate the skills of configuring Cisco routers/switches;
* Demonstrate the skills of managing a Cisco Internetwork;

**Topics Covered**

* Ethernet and TCP/IP networks
* Subnetting
* Variable length subnetting
* IP summarization
* IPv6
* Cisco Internetworking Operating System (IOS)
* Configure IP routing
* OSPF
* Layer 2 switching
* VLANS
* InterVLAN routing
* Configure NAT
* Configure STP
* Configure SNMP
* Configure DHCP
* Manage Cisco Internetworking
* WAN
* Troubleshooting IP, IPv6 and VLANs
* Network security
* Standard access list control
* Extended access list control