



INTRODUCTION TO ROUTING AND SWITCHING

Course Number	EECE 230
Course Name	INTRODUCTION TO ROUTING AND SWITCHING
Credit Value (Breakdown of theory and lab credits)	3 credits, 3 Theory + 0 Lab
Catalog Course Description	This course describes the architecture, components, and operations of routers and switches. Students learn how to design Local Area Networks (LANs), Wide Area Networks (WANs), and inter-networks using modern intermediate devices, including Layer 2 and multi-layer switches and routers. By the end of this course, students are able to design and deploy networks and resolve common issues with RIPv1, RIPv2, single-area and multi-area OSPF, virtual LANs, and inter-VLAN routing in both IPv4 and IPv6 networks. Prerequisite: EECE 132. (3, 3T+0L)
Student Learning Outcomes/Objectives /Competencies of the Course	<ol style="list-style-type: none"> 1. Describes the architecture, components, and operations of routers and switches in a IPv4 and IPv6 network. 2. Troubleshoot common network problems at Layers 1, 2, 3, and 7 using a layered model approach 3. Describe the operation, characteristics, advantages and disadvantages of link-state and distance vector routing protocol. 4. Use link-state and distance vector protocols in IPv4 and IPv6 networks to automate routing processes. 5. Describe the principles of operation of Access Control Lists (ACLs), and apply them to secure networks. 6. Describe the principles of operation of VLANs, including 802.1Q standard. 7. Design inter-networks composed of WANs, LANs, and VLANs, utilizing dynamic routing protocols and VLAN tagging.
College-Wide Student Learning Outcomes	<p>Information regarding which of the following college-wide objectives will be addressed in the course along with which assignment will be used to measure this outcome:</p> <ol style="list-style-type: none"> 1. Critical Thought