HIBBING COMMUNITY COLLEGE
COURSE OUTLINE

COURSE NUMBER & TITLE: CNT1020: Router Theory and Router
Technologies
CREDITS: 3 (2 Lec / 1 Lab)
PREREQUISITES: CNT1010: Networking Fundamentals

CATALOG DESCRIPTION:
This course describes the architecture, components, and operations of routers
and switches in a small network. Students learn how to configure a router and
a switch for basic functionality. By the end of this course, students will be able
to troubleshoot routers and switches and resolve common issues with RIPv1,
RIPng, singlearea and multi-area OSPF, virtual LANs, and inter-VLAN routing
in both IPv4 and IPv6 networks.

OUTLINE OF MAJOR CONTENT AREAS:
   I.   Introduction to Switched Networks
  II.   Basic Switching Concepts and Configuration
 III.   VLANs
  IV.   Routing Concepts
   V.   Inter-VLAN routing
  VI.   Static Routing
 VII.   Dynamic Routing
VIII.   Single-Area OSPF
  IX.   Access Control Lists
   X.   DHCP
  XI.   Network Addresses Translation for IPv4

COURSE GOALS/OBJECTIVES/OUTCOMES:
Students will
1. understand and describe basic switching concepts and the operation of Cisco
    switches.
2. understand and describe the purpose, nature, and operations of a router,
    routing tables, and the route lookup process.
3. understand and describe how VLANs create logically separate networks and
    how routing occurs between them.
4. understand and describe dynamic routing protocols, distance vector routing
    protocols, and link-state routing protocols.
5. configure and troubleshoot static routing and default routing (RIP and RIPng).
6. configure and troubleshoot an Open Shortest Path First (OSPF) network.
7. Understand, configure, and troubleshoot access control lists (ACLs) for IPv4
    and IPv6 networks.
8. understand, configure, and troubleshoot Dynamic Host configuration Protocol
    (DHCP) for IPv4 and IPv6 networks.

9. understand, configure, and troubleshoot Network Address Translation (NAT) operations.

MNTC GOALS AND COMPETENCIES MET:
N/A

HCC COMPETENCIES MET:
Communicating Clearly and Effectively
Working Productively and Cooperatively

STUDENT CONTRIBUTIONS:
The student is expected to prepare for class, attend all lectures and labs, participate in all class activities, complete everything on time, and request assistance if needed.

STUDENT ASSESSMENT SHALL TAKE PLACE USING INSTRUMENTS SELECTED/DEVELOPED BY THE COURSE INSTRUCTOR.

SPECIAL INFORMATION: (SPECIAL FEES, DIRECTIVES ON HAZARDOUS MATERIALS, ETC.)

AASC APPROVAL DATE:	**May 13, 2014**
REVIEW DATE:	**May 2019**

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