

# **ECE 792-027/CSC791-020**

## **Routed network design and management**

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**Objective or Description:** In this lab-based course, we explore the fundamental issues that arise in the design and management of routed computer networks (in particular, wide area networks and datacenter switch fabrics). We outline available methods and tools for operating and managing such networks. We provide the students with practical experience on available tools in the network design and management space. A series of 12 six-hour lab demos and exercises are used for that purpose.

Note that the field of network design and management is vast. In this course, we focus on: (a) topics covered by the CCNP ROUTE certification and (b) topics relevant to switch fabrics in data centers.

**Prerequisites:** ECE/CSC570 or ECE/CSC573; knowledge of CLI.

**Textbook:** instructor notes.

**Topics:**

- Refresher on VLSM and Router architecture
- Routing Requirements and Design Principles
- OSPF
- Route redistribution
- Policy-based Routing
- BGP
- Switch fabrics in datacenters
- Virtualization in datacenters

**Grading:**

- 2 midterm exams – 25% each
- 1 lab exam – 25%
- Lab homeworks – 25%

**Cross-listing in other departments:** CSC791-020