

**TCOM 609**  
**Interior Gateway Protocol Routing**  
**George Mason University**  
**Spring 2019**

Instructor

Robert Hosford, MS, CCIE No. 0x3977

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Office Hours: I prefer to handle by email; however, other arrangements can be made.

Class Schedule

Spring Session: Jan 22, 2019 - May 15, 2019

Days: Thursday

Time: 7:20-10:00pm

Location: Music/Theater Building 1004

Online Class. Please make sure that you have the software installed and tested before Thursday 1/24. I will have a recording that you can use to test the online software.

Required Texts

Routing TCP/IP, Volume I, Second Edition Authors: Jeff Doyle and Jennifer Carroll ISBN: 1-58705-202-4 Publication Date: October 19, 2005	IPv6 Fundamentals: A Straightforward Approach to Understanding IPv6 (2nd Edition) Authors: Rick Graziani ISBN: 1587144778
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I follow the textbook as closely as possible. For cases where the textbook does not provide sufficient detail, additional material is incorporated and referenced accordingly. Packet Tracer is free and required for labs. <https://www.netacad.com/courses/packet-tracer/introduction-packet-tracer> Sign up for the free tutorial.

Course Overview

This course is a second-year graduate class. Prerequisites: TCOM 515 and TCOM 535, or equivalent knowledge. This class will update routing knowledge to prepare students for dual stack or IPv6 only networks. Routing basics including IPv6 addressing, IPv6 static routes, route tables, and route aggregation will be covered to provide a foundation enabling the student to learn the concepts and frameworks of the various dynamic routing protocols. Students will examine in detail RIPv2, RIPng, EIGRP, OSPFv2, OSPFv3, and IS-IS. In addition, route control and interoperability topics such as route redistribution, route filtering, and route maps will be covered.

Date	Topic	Read Chapters
24-Jan	Week 1 Comparing IPv4 and IPv6, IPv6 Packet, IPv6 Addressing	1
31-Jan	Week 2 ND, ICMP, TCP, UDP, Routing, Route Table.	1 & 3
7-Feb	Week 3 Static Routes, Dynamic Routing Protocols, Distance Vector Routing Protocols.	3 & 4
14-Feb	Week 4 Link State Routing Protocols.	4
21-Feb	Week 5 RIPv2 & RIPv6 Overview, Configuration, Classful/less Routing	5 & 6
28-Feb	Week 6 No Class Reading Day	
7-March	Week 7 Mid-Term on IPv4 and IPv6 topics	
14-March	Week 8 EIGRP Overview, Packets, Metrics & Timers / EIGRP Packet Transport DUAL, Packets, Configuration, & Summarization.	7
21-March	Week 9 OSPFv2 Operation, Adjacencies, Packets, Flooding, and the Link-State Database.	8
28-March	Week 10 OSPF Areas, Virtual Links, & LSAs	8
4-Apr	Week 11 OSPF Configuration, Filtering, Authentication, & Case Studies	8
11-Apr	Week 12 Integrated IS-IS: Adjacencies, Areas, PDUs, TLVs, and Configuration	10
18-Apr	Week 13 Route Redistribution, Route Filtering, and Policy Based Routing	11, 13, 14
25-Apr	Week 14 No Class Project Due	
2-May	Week 15 No Class Reading Day	
9-May	Week 16 Final on IPv4 and IPv6 IGP topics.	

Note: This schedule is tentative. We will not cover the entire textbook. Coverage of topics may be adjusted. If needed classes might extend to week 6 or 14.

All lectures will be posted on Blackboard. Class information is communicated through George Mason University email accounts. Students are responsible for ensuring they are getting the class list emails. It is therefore essential that students activate their GMU Email accounts. **I will only respond to GMU.EDU emails.**

#### Tests and Grading

Open book with open notes. Weekly homework due before start of class. Late work will not be accepted. All work must be turned in before the next assignment is accepted.

Homework = 25%

Projects = 25%

Mid Term = 25%

Final = 25%

## **Policies**

### **Academic Integrity**

**The George Mason University honor code will be strictly enforced.**

Students requiring make-up exams must submit a written request to me at least two weeks prior to the date that the original test is scheduled. Make-up exams will be an alternate exam and proctored by the TCOM office manager or other available staff.

### **Mason Email Accounts**

Students are required to use MasonLive email. <https://masonlivelogin.gmu.edu/login>  
This is an Office 365 account.

### **Office of Disability Services**

Students requiring the use of accommodations, please contact me and the Office of Disability (ODS) at 703-993-2474 <http://ods.gmu.edu>

## **Other Resources**

### **Writing Center:**

Robinson Hall A114. Phone 703-993-1200 <http://writingcenter.gmu.edu>

**University Libraries:** “Ask a Librarian” <https://library.gmu.edu/>

**Counseling and Psychological Services (CAPS):** Phone 703-993-2380  
<https://caps.gmu.edu/>

### **University Policies:**

The University Catalog (<https://catalog.gmu.edu/>) is the central resource for university policies affecting students, faculty, and staff conduct in university affairs. Other policies are available at University Policy (<https://universitypolicy.gmu.edu/>). All members of university community are responsible for knowing and following established policies.