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1-2015

ITS 214.01: Network Operating Systems - Infrastructure

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| | |
|----------------------|---|
| Instructor: | Zach Rossmiller – MCSE, MCSA, MS, MCP, A+, Net+, ITIL v3 |
| Email: | zachary.rossmiller@umontana.edu |
| Phone: | 243-6556 |
| Office: | GH8D |
| Office Hours: | Available by appointment |
| Section: | 01 (CRN#: 35005) |
| Credits: | 3 |
| Meeting Time: | MWF; M, W 8:10 – 9:00 AM; F 8:10 – 10:00 AM |
| Location: | AD 16 |

Prerequisites:

- ITS 212 – Network OS – Server Admin
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UM Course Description

Principles and implementation of enterprise networking services. Topics include Protocol Binding, DNS, DHCP, WINS, Remote Access, IP Routing, IP Security, Network Address Translation, and Certificate Services.

Course Structure:

The course combines classroom-based activities with independent, self-directed, lab experiences. The lab component of the course is intended to provide students the opportunity to apply server technologies commonly used by professionals in the IT field.

My goal is to give you experience with server structure and management so that when you enter the workforce, you already have skills that set you apart from other candidates who only have a textbook understanding of servers. I emphasize real-world application of the material so you have a practical appreciation of the information.

Course Overview:

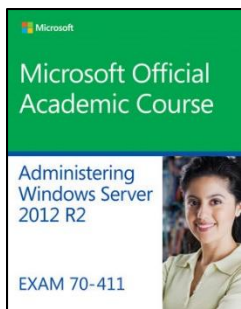
ITS 214 examines server applications commonly used in administering and managing Windows Server 2012R2. This course validates the skills and knowledge necessary to administer a Windows Server 2012 Infrastructure in an enterprise environment. This class stems from the Microsoft 70-411 “Administering Windows Server 2012” certification. The following topics will be explored: Windows Deployment Services, Windows Server Update Services, Network Policy Server, Network Access Protocol, Group Policy Objects, Domain Name Sever, Virtual Private Networking, and Active Directory.

Course Objectives:

Upon completion of this course, students will be able to:

- Deploy and manage server images utilizing the Windows Deployment Services (WDS) role.
- Implement patch management using Windows Server Update Services (WSUS).
- Implementing a Group Policy Infrastructure
- Managing User and Service Accounts
- Maintaining Active Directory Domain Services
- Configuring and Troubleshooting DNS
- Configuring and Troubleshooting Remote Access
- Installing, Configuring, and Troubleshooting the Network Policy Server Role
- Optimizing File Services
- Increasing File System Security
- Configure Distributed File System (DFS)

Required Materials:



Digital Content: 70-411 R2 MOAC Labs Online EOAR with 70-411 Administering Windows Server 2012 R2 eText Digital Set
ISBN : 978-1-118-96630-3

Additionally, if you do not want to purchase the e-text version, you may purchase the book version from the Bookstore for \$210.95 or online.

Paperback: 70-411 Administering Windows Server 2012 R2 with MOAC Labs Online Reg Card Set. ISBN : 978-1-118-96636-5

Go: <http://www.wiley.com/WileyCDA/WileyTitle/productCd-EHEP003138.html>

Then scroll down until you see:

Digital Content
70-411 R2 MOAC Labs Online EOAR with 70-411 Administering Windows Server 2012 R2 eText Digital Set
ISBN : 978-1-118-96630-3
June 2014, ©2015
\$124.50 **BUY**

Course Schedule:

I will have a PDF version of the class schedule posted on Moodle. I will let you know if the schedule changes, but when in doubt, refer to Moodle for the latest class schedule.

Business Case Scenarios and Attendance:

In order to succeed in this class, you will need to attend class. Attendance will be taken at the beginning of each class. I understand there might be personal issues that might prevent you from attending class. Here are my rules on attendance:

- After the end of each lecture, students will have time in class to complete the business case scenarios at the end of the chapter. The business case scenarios will be counted as attendance and will be counted as four (4) points per day.
- All business case scenarios are due by 11:59 PM that night in order to receive credit.

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- If a student misses class, they will have until the 11:59 PM deadline to submit both business case scenarios for half credit. There will be no makeup for business case scenarios after the deadline.
 - If you are going to be gone, please email me so I am aware of the situation.
-

Quizzes:

There will be twelve (12) quizzes throughout the semester. The quizzes will be worth ten points each, and will be relevant to what we are learning during that particular day or week. Quizzes will be made available as soon as that material has been covered and will be due by the next scheduled class meeting unless I state differently on Moodle or in class. Quizzes will be a 25-minute quiz that will be taken outside of class on Moodle and may take the form of a multiple choice, true/false, and matching definitions. Make up quizzes will not be given.

Lab Assignments:

Fridays will be the designated lab day. We will do the labs in class and the labs will be due the following week at 8:00 AM (before the next lab) unless stated otherwise. With each lab, you will need to fill out the lab worksheet and answer the lab questions. You will have a blank template and you will be required to fill it out. **All lab assignments are to be submitted via Moodle.**

Homework Assignments:

As we cover each chapter in the textbook I will assign review questions over the material. These will be assigned as we work through each chapter. I expect them to be typed with proper formatting. Normally, all homework assignments will be due the day of the exam. **All homework assignments are to be submitted via Moodle.**

Late Work/Due Dates:

All exams are to be taken on the assigned date and time unless prior arrangements are made. **If you have an emergency, you need to contact me IMMEDIATELY; otherwise, you will receive a ZERO.** Students will have **48 hours** before the exam to contact me, otherwise they will receive a zero.

Assignments are due on the assigned date and time. If a due date is changed, it will be announced in class. **Late work is not accepted.**

Submission Requirements:

For assignments that you upload to the Moodle shell, please use a word processor and submit in PDF or .DOCX format.

For Homework Assignments:

LastNameFirstLetter - ITS214 – H-x (Where x is the assignment, such as Homework lesson 1)

Example: rossmillerz - ITS 214 – H-1

For Lab Assignments:

LastNameFirstLetter - ITS214 – L-x (Where x is the assignment, such as Lab lesson 1)

Example: rossmillerz - ITS 214 – L-1

Exams:

There will be three (3) exams throughout the semester (not including the Final Exam). The exams will cover material from the labs, lectures, readings, and textbooks. Each exam will have thirty-five questions, worth three points each (105 total). Study guides will be made available for the students and we will have a designated day for review before the exam.

Final Exam:

The final exam is comprehensive and will be given in two parts – a written section and multiple choice. A comprehensive study guide will be made available when we finish the last exam for the class.

Grading Course Activities:

Moodle will be used to post grades.

| Activity | Points | Weight |
|-------------------------|--------------|-------------|
| Course Exams | | |
| Exam 1 | 105 | |
| Exam 2 | 105 | |
| Exam 3 | 105 | |
| Final Exam | 240 | |
| | | |
| Exam Subtotal | 555 | 30% |
| | | |
| Homework Assignments | 490 | 25% |
| Lab Assignments | 440 | 20% |
| Quizzes | 120 | 15% |
| Business Case Scenarios | 88 | 10% |
| | | |
| Total | 1,693 | 100% |

| Grading Scale: | Letter Grade: |
|-----------------|---------------|
| 100 – 93.00% | A |
| 92.99% - 90.00% | A- |
| 89.99% - 87.00% | B+ |
| 86.99% - 83.00% | B |
| 82.99% - 80.00% | B- |
| 79.99% - 77.00% | C+ |
| 76.99% - 73.00% | C |
| 72.99% - 70.00% | C- |
| 69.99% - 67.00% | D+ |
| 66.99% - 60.00% | D |
| 59.00% - 0.00% | F |

Topics Covered

- **Unit 1**
 - Lesson 1 - Deploying and Managing Server Images
 - Lesson 2 - Implementing Patch Management
 - Lesson 3 - Monitoring Servers
 - Lesson 4 - Configuring Distributed File System (DFS)
 - Lesson 5 - Configuring File Server Resource Manager (FSRM)
 - Lesson 6 - Configuring File Services and Disk Encryption
 - Lesson 7 - Configure Advanced Audit Policies

- **Unit 2**
 - Lesson 8 - Configuring DNS Zones
 - Lesson 9 - Configuring DNS Records
 - Lesson 10 - Configuring VPN and Routing
 - Lesson 11 - Configuring DirectAccess
 - Lesson 12 - Configuring a Network Policy Server
 - Lesson 13 - Configuring NPS Policies
 - Lesson 14 - Configuring Network Access Protection (NAP)

- **Unit 3**
 - Lesson 15 - Configuring Server Authentication
 - Lesson 16 - Configuring Domain Controllers
 - Lesson 17 - Maintaining Active Directory
 - Lesson 18 - Configuring Account Policies
 - Lesson 19 - Configuring Group Policy Processing
 - Lesson 20 - Configuring Group Policy Settings
 - Lesson 21 - Managing Group Policy Objects
 - Lesson 22 - Configuring Group Policy Preferences

Resources

Here is a list of resources that I have used not only as study material, but also as a server administrator:

- [Microsoft TechNet](#)
- [Microsoft's Born-To-Learn: Server Certification Study Group](#)
- [CBT Nugget: Microsoft Windows Server 2012 70-411 with R2 Updates](#)
- [Training Guide Administering Windows Server 2012 R2 \(Microsoft Press Training Guide\)](#)
- [Companion Content for Microsoft Official Courseware \(MOC\)](#)

Note: Resources will be added as the semester progresses.

Email & Moodle:

- The university policy regarding student e-mail requires faculty members to only correspond with students regarding academic issues if both parties use official UM e-mail addresses. So please do not use GMAIL, Yahoo, Hotmail, etc... to contact me.
- I have email on my phone, work computer, personal computer, and tablet. I check my email constantly. If you email me during the day, expect a response within a few hours (most of the time). I will respond to emails over the weekend, but expect a delayed response.
- Treat all emails as a form of professional communication in the class. Your messages should be well written and grammatically correct. Furthermore, your messages should begin with a proper salutation and closing. **If your email does not meet these standards of professional communication, you will get a response asking you to rewrite it.**
- It is your responsibility to check your email account and Moodle regularly. All email correspondence will be sent to your "@UMConnect.umt.edu" or "umontana.edu" accounts. You are responsible for all material provided to you through these venues so you should check them both regularly. It is a good idea to keep your Sent Items for all email communications.

Academic Conduct:

All students must practice academic honesty. Academic misconduct is subject to an academic penalty by the course instructor and/or a disciplinary sanction by the University. All students need to be familiar with the Student Conduct Code. The Code is available for review online at http://www.umt.edu/vpsa/policies/student_conduct.php.

Plagiarism:

Plagiarism will not be tolerated. If I suspect plagiarism, I will notify both the student(s) and the department chair as I investigate the situation. Assignments involving plagiarism will receive a 0. Make sure as you complete your assignments that everything is in your own words. Please do not copy material from other students. For more information on plagiarism, please visit: <http://libguides.lib.umt.edu/plagiarism>

Disability Accommodations Policy:

Students with documented disabilities will receive appropriate accommodations in this course when requested in a timely manner. Please be prepared to provide a letter from the DSS Coordinator and a description of the requested accommodation after class or by appointment with me. Please submit your requests early in the semester or even before the start of class. Accommodations will be available after we have discussed your request, but will not be available retroactively. I want each student to succeed, and putting accommodations in place as soon as possible helps make that happen.

Changes to the Syllabi:

NOTE: Instructor reserves the right to modify syllabi and assignments as needed based on faculty, student, and/or environmental circumstances. If changes are made to the syllabus, amended copies will be dated and made available to the class through Moodle.

Tentative Course Schedule LAST REVISED: 1/20/2015

| Week | Date | Topic | Assignments Due: |
|------|-----------------|--|--|
| 1 | 1/26/15 – (Mon) | Introduction | • Mailing List |
| | 1/28/15 – (Wed) | Lesson 1 - Deploying and Managing Server Images | |
| | 1/30/15 – (Fri) | Lab 1 | |
| 2 | 2/2/15 – (Mon) | Lesson 2 - Implementing Patch Management | |
| | 2/4/15 – (Wed) | Lesson 3 - Monitoring Servers | |
| | 2/6/15 – (Fri) | Lab 2 Lab 3 | • Lab 1 @ 8:00 AM |
| 3 | 2/9/15 – (Mon) | Lesson 4 - Configuring Distributed File System (DFS) | |
| | 2/11/15 – (Wed) | Lesson 5 - Configuring File Server Resource Manager (FSRM) | |
| | 2/13/15 – (Fri) | Lab 4 Lab 5 | • Lab 2 @ 8:00 AM • Lab 3 @ 8:00 AM |
| 4 | 2/16/15 – (Mon) | NO CLASS – Presidents Day | |
| | 2/18/15 – (Wed) | Lesson 6 - Configuring File Services and Disk Encryption | |
| | 2/20/15 – (Fri) | Lab 6 | • Lab 4 @ 8:00 AM • Lab 5 @ 8:00 AM |
| 5 | 2/23/15 – (Mon) | Lesson 7 - Configure Advanced Audit Policies Lab 7 | |
| | 2/25/15 – (Wed) | Review for Exam 1 | |
| | 2/27/15 – (Fri) | EXAM 1 (Lessons 1 – 7) | • Lesson 1 – 7 • Lab 6 @ 8:00 AM • Lab 7 @ 8:00 AM |
| 6 | 3/2/15 – (Mon) | Lesson 8 - Configuring DNS Zones | |
| | 3/4/15 – (Wed) | Lesson 9 - Configuring DNS Records | |
| | 3/6/15 – (Fri) | Lab 8 Lab 9 | |
| 7 | 3/9/15 – (Mon) | Lesson 10 - Configuring VPN and Routing | |
| | 3/11/15 – (Wed) | Lesson 11 - Configuring DirectAccess | |
| | 3/13/15 – (Fri) | Lab 10 Lab 11 | • Lab 8 @ 8:00 AM • Lab 9 @ 8:00 AM |
| 8 | 3/16/15 – (Mon) | Lesson 12 - Configuring a Network Policy Server | |
| | 3/18/15 – (Wed) | Lesson 13 - Configuring NPS Policies | |
| | 3/20/15 – (Fri) | Lab 12 | • Lab 10 @ 8:00 AM |

| | | | |
|----|-----------------|---|--|
| | | Lab 13 | <ul style="list-style-type: none"> • Lab 11 @ 8:00 AM |
| 9 | 3/23/15 – (Mon) | Lesson 14 - Configuring Network Access Protection (NAP) Lab 14 | |
| | 3/25/15 – (Wed) | Review for Exam 2 | |
| | 3/27/15 – (Fri) | EXAM 2 (Lessons 8 – 14) | <ul style="list-style-type: none"> • Lessons 8 – 14 • Lab 12 @ 8:00 AM • Lab 13 @ 8:00 AM • Lab 14 @ 8:00 AM |
| 10 | 3/30/15 – (Mon) | NO CLASS – Spring Break | |
| | 4/1/15 – (Wed) | NO CLASS – Spring Break | |
| | 4/3/15 – (Fri) | NO CLASS – Spring Break | |
| 11 | 4/6/15 – (Mon) | Lesson 15 - Configuring Server Authentication | |
| | 4/8/15 – (Wed) | Lesson 16 - Configuring Domain Controllers | |
| | 4/10/15 – (Fri) | Lab 15 Lab 16 | |
| 12 | 4/13/15 – (Mon) | Lesson 17 - Maintaining Active Directory | |
| | 4/15/15 – (Wed) | Lesson 18 - Configuring Account Policies | |
| | 4/17/15 – (Fri) | Lab 17 Lab 18 | <ul style="list-style-type: none"> • Lab 15 @ 8:00 AM • Lab 16 @ 8:00 AM |
| 13 | 4/20/15 – (Mon) | Lesson 19 - Configuring Group Policy Processing | |
| | 4/22/15 – (Wed) | Lesson 20 - Configuring Group Policy Settings | |
| | 4/24/15 – (Fri) | Lab 19 Lab 20 | <ul style="list-style-type: none"> • Lab 17 @ 8:00 AM • Lab 18 @ 8:00 AM |
| 14 | 4/27/15 – (Mon) | Lesson 21 - Managing Group Policy Objects | |
| | 4/29/15 – (Wed) | Lesson 22 - Configuring Group Policy Preferences | |
| | 5/1/15 – (Fri) | Lab 21 Lab 22 | <ul style="list-style-type: none"> • Lab 19 @ 8:00 AM • Lab 20 @ 8:00 AM |
| 15 | 5/4/15 – (Mon) | Review | |
| | 5/6/15 – (Wed) | EXAM 3 (Lessons 15 – 22) | <ul style="list-style-type: none"> • Lessons 15 - 22 • Lab 21 @ 8:00 AM • Lab 22 @ 8:00 AM |
| | 5/8/15 – (Fri) | Review Session* | |
| 16 | 5/11/15 – (Mon) | 10:00 – 12:00 PM – FINAL EXAM | |