TRIAL COURSE OR NEW COURSE PROPOSAL

SUBMITTED BY:

<table>
<thead>
<tr>
<th>Department</th>
<th>College/School</th>
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<tr>
<td>Business Systems Technologies, IT Specialist Program</td>
<td>CRCD</td>
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<tr>
<th>Prepared by</th>
<th>Phone</th>
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<tbody>
<tr>
<td>Keith Swarner</td>
<td>455-2820</td>
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<table>
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<tr>
<th>Email Contact</th>
<th>Faculty Contact</th>
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<tbody>
<tr>
<td><a href="mailto:keith.swarner@uaf.edu">keith.swarner@uaf.edu</a></td>
<td><a href="mailto:keith.swarner@uaf.edu">keith.swarner@uaf.edu</a>/455-2820</td>
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See [http://www.uaf.edu/uafgov/faculty/cd/cdman.html](http://www.uaf.edu/uafgov/faculty/cd/cdman.html) for a complete description of the rules governing curriculum & course changes.

1. ACTION DESIRED (check one):
   - Trial Course
   - New Course
   - X

2. COURSE IDENTIFICATION:
   - Dept: CITS
   - Course #: 240
   - No. of Credits: 3

Justify upper/lower division status & number of credits:

This course will provide students with an understanding of how to implement, manage, and administer a wide range of network services deployed in nearly all network environments. This course would be appropriate for students who are entering their second or third semester of the IT Specialist associate degree program.

Approximately the following amount of instructional time will be delivered in each of the following major topic areas (Note: the terminology used in the following list is generic language and will not necessarily match perfectly with the topics language used on the sample syllabus being submitted with this new course form): Networking Models, 1 hr.; Verifying and Monitoring Connectivity, .5 hrs.; IP Addressing, 1 hr.; Subnetting Fundamentals, 1 hr.; Dynamic Host Configuration Protocol (DHCP) Fundamentals, 2 hrs.; Implementing DHCP, 1.5 hrs.; DHCP Relay Agent, 1 hr.; Managing and Monitoring DHCP, 1.5 hrs.; Troubleshooting DHCP, 1.5 hrs.; Name Resolution Process and Methods, 2 hrs.; Implementing DNS Server Service, 2 hrs.; Managing and Maintaining DNS Server Service, 1.5 hrs.; Securing DNS, 1 hr.; Monitoring and Troubleshooting DNS, 1.5 hrs.; Active Directory and Group Policy Object (GPO) Overview, 1.5 hrs.; User Rights and Permissions, .5 hrs.; Implementing Network Security, 2.5 hrs.; IP Security (IPSec), 1.5 hrs.; Implementing and Monitoring IPSec, 2.5 hrs.; Routing and Remote Access Service (RRAS), 1.5 hrs.; Implementing and Configuring Routing Protocols, 2 hrs.; Implementing and Configuring Packet Filterers, 1.5 hrs.; Network Access Infrastructure and Server Components, 1.5 hrs.; VPN Connection Components and Encryption Protocols, 2 hrs.; Remote Authentication Dial In User Service (RADIUS), 1 hr.; TCP/IP Diagnostic Tools, 1 hr.; Network Monitoring, 1 hr.; Troubleshooting Connectivity and Common Problems, 1 hr.

3. PROPOSED COURSE TITLE: System and Network Services Administration

4. CROSS LISTED? YES/NO
   - No
   - If yes, Dept: NA
   - Course #: NA

(Requires approval of both departments and deans involved. Add lines at end of form for such signatures.)

5. STACKED? YES/NO
   - No
   - If yes, Dept: NA
   - Course #: NA

6. FREQUENCY OF OFFERING: As Demand Warrants
   - (Every or Alternate) Fall, Spring, Summer — or As Demand Warrants

7. SEMESTER & YEAR OF FIRST OFFERING (if approved)
   - Fall 2009
8. COURSE FORMAT:
NOTE: Course hours may not be compressed into fewer than three days per credit. Any course compressed into fewer than six weeks must be approved by the college or school's curriculum council. Furthermore, any core course compressed to less than six weeks must be approved by the core review committee.

<table>
<thead>
<tr>
<th>COURSE FORMAT: (check one)</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>X 6 weeks to full semester</th>
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<tr>
<td>OTHER FORMAT (specify)</td>
<td>NA</td>
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<tr>
<td>Mode of delivery (specify lecture, field trips, labs, etc)</td>
<td>Lecture</td>
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9. CONTACT HOURS PER WEEK:

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<tr>
<th>LECTURE hours/weeks</th>
<th>LAB hours/week</th>
<th>PRACTICUM hours/week</th>
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<tr>
<td>3</td>
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Note: # of credits are based on contact hours. 800 minutes of lecture=1 credit. 2400 minutes of lab in a science course=1 credit. 1600 minutes in non-science lab=1 credit. 2400-4800 minutes of practicum=1 credit. 2400-8000 minutes of internship=1 credit. This must match with the syllabus. See http://www.uaf.edu/uafgov/faculty/cd/credits.html for more information on number of credits.

| OTHER HOURS (specify type) | NA |

10. COMPLETE CATALOG DESCRIPTION including dept., number, title and credits (50 words or less, if possible):

CITS F240  System and Network Services Administration
3 Credits  Offered As Demand Warrants
This course teaches students how to implement and administer the core network services operating within a network environment. Topics include: DHCP, DNS, remote access, file and print, Web, update and patch management, security and network management services. Students will develop a conceptual understanding of each network service and learn how to plan, implement, and administer each service. Prerequisite: CITS F204 or F241 or instructor permission. Recommended: CITS F212 (3+0)

11. COURSE CLASSIFICATIONS: (undergraduate courses only. Use approved criteria found on Page 10 & 17 of the manual. If justification is needed, attach on separate sheet.)

<table>
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<tr>
<th>H = Humanities</th>
<th>N = Natural Science</th>
<th>S = Social Sciences</th>
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Will this course be used to fulfill a requirement for the baccalaureate core? YES X NO

IF YES, check which core requirements it could be used to fulfill:

<table>
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<tr>
<th>O = Oral Intensive, Format 6</th>
<th>W = Writing Intensive, Format 7</th>
<th>Natural Science, Format 8</th>
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12. COURSE REPEATABILITY:

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<tr>
<th>Is this course repeatable for credit?</th>
<th>YES X NO</th>
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Justification: Indicate why the course can be repeated (for example, the course follows a different theme each time). NA

| How many times may the course be repeated for credit? | NA TIMES |

| If the course can be repeated with variable credit, what is the maximum number of credit hours that may be earned for this course? | NA CREDITS |
13. GRADING SYSTEM:

| LETTER:  | X | PASS/FAIL: |   |

RESTRICTIONS ON ENROLLMENT (if any)

14. PREREQUISITES

| CITS F204 or F241 or instructor approval | These will be required before the student is allowed to enroll in the course. |

| RECOMMENDED | CITS F212 or equivalent skills. | Classes, etc. that student is strongly encouraged to complete prior to this course. |

15. SPECIAL RESTRICTIONS, CONDITIONS

| None |

16. PROPOSED COURSE FEES

| None |

17. PREVIOUS HISTORY

| Has the course been offered as special topics or trial course previously? Yes/No | Yes |

If yes, give semester, year, course #, etc.:
The topics in this new course proposal have been offered on a consistent basis over the last several years through the topics class CIOS 247 Advanced Networking and Communications. Because this course topic is being delivered on a consistent basis and because this course will now serve as a required course for the Network and System Administration concentration of the IT Specialist program, we are recommending and proposing that the course topic be delivered through a distinct course number.

18. ESTIMATED IMPACT

| WHAT IMPACT, IF ANY, WILL THIS HAVE ON BUDGET, FACILITIES/SPACE, FACULTY, ETC. |

The topics within this class will no longer be taught through the topics class of CIOS 247 and faculty currently teaching this topic through CIOS 247 will instead be assigned to teach this topic through this new designator and course number; therefore it is not anticipated that the addition of this course will have any impact on budget, facilities/space, or faculty resources.

19. LIBRARY COLLECTIONS

| Have you contacted the library collection development officer (ffklj@uaf.edu, 474-6695) with regard to the adequacy of library/media collections, equipment, and services available for the proposed course? If so, give date of contact and resolution. If not, explain why not. |

| No | Yes | X |

Karen Jensen, the collection development officer for the library, was contacted by email on 9/29/2008. We don’t anticipate the need for any...
20. IMPACTS ON PROGRAMS/DEPTS
What programs/departments will be affected by this proposed action?
Include information on the Programs/Departments contacted (e.g., email, memo)
ITS. All CRCD CIOS faculty from the following campus have been contacted regarding this change: IAC, KuC, NWC, TVC.

21. POSITIVE AND NEGATIVE IMPACTS
Please specify positive and negative impacts on other courses, programs and departments resulting from the proposed action.

Positive Impacts: This course will serve as a required course for the Network and System Administration concentration of the IT Specialist A.A.S. degree program. The content of this course enables students to build on the skills and knowledge developed in CITS 204 Introduction to Network Support and Administration. In CITS F204 students are introduced to function and purpose of networking and network services. In this course, CITS F240, students will develop the knowledge and skills necessary to plan, implement and administer network services. In addition to furthering the development of knowledge introduced in CITS F204 course, we believe that offering this course through a distinct course number, rather than a topics course, will provide more clarity to the current offerings for IT Specialist students, advisors and the UAF graduation office, and that offering this course through a distinct course number is more appropriate than continuing to offer it through a topics class.

JUSTIFICATION FOR ACTION REQUESTED
The purpose of the department and campus-wide curriculum committees is to scrutinize course change and new course applications to make sure that the quality of UAF education is not lowered as a result of the proposed change. Please address this in your response. This section needs to be self-explanatory. Use as much space as needed to fully justify the proposed course.

Over the past nine month faculty within the IT Specialist program have been actively collaborating and seeking input from our community advisory council, recent graduates, and the UAF Computer Science department with the goal of streamlining and improving the educational opportunities provided through the certificate and associate degree programs. One of the significant outcomes of this process was the decision to offer three concentrations that will enable students to develop a comprehensive and an in-depth set of skills and knowledge within a specific area of information technology; rather than a less comprehensive set of skills and knowledge over a broader range of information technology areas.

As was mentioned under item 21, this course will serve as a required course for the Network and System and Administration concentration of the IT Specialist A.A.S. degree program and the topics delivered through this course will serve as an essential course for the system administration course series that makes up this concentration. Without this course, graduates from this concentration area would only be able claim that they understand the function and purpose of these network services, but would not be able to claim that they possess the knowledge and skill to plan, implement and administer these services. Employers hiring individuals into system administration positions will expect our graduates to possess the skills and knowledge required to plan, to implement and to administer these network services. The addition of this course will enable IT Specialist students the opportunity to learn these essential system administration skills.
## APPROVALS: SIGNATURES ON FILE AT THE GOVERNANCE OFFICE

<table>
<thead>
<tr>
<th>Signature, Chair, Program/Department of:</th>
<th>IT Specialist Program</th>
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<tr>
<td>Date</td>
<td>10/6/2008</td>
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<tr>
<th>Signature, CRCD Division Coordinator for:</th>
<th>Business Systems Technology</th>
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<tr>
<th>Signature, Chair, College/School Curriculum Council for:</th>
<th>College of Rural and Community Development</th>
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<tr>
<th>Signature, Dean, College/School of:</th>
<th>College of Rural and Community Development</th>
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Signature of Provost (if applicable)

Offerings above the level of approved programs must be approved in advance by the Provost.

## ALL SIGNATURES MUST BE OBTAINED PRIOR TO SUBMISSION TO THE GOVERNANCE OFFICE

<table>
<thead>
<tr>
<th>Signature, Chair, UAF Faculty Senate Curriculum Review Committee</th>
<th>Date</th>
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## ADDITIONAL SIGNATURES: (If required)

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<th>Signature, Dean, College/School of:</th>
<th>Date</th>
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ATTACH COMPLETE SYLLABUS (as part of this application).

Note: syllabus must follow the guidelines discussed in the Faculty Senate Guide http://www.uaf.edu/uafgov/faculty/cd/syllabus.html. The department and campus wide curriculum committees will review the syllabus to ensure that each of the items listed below are included. If items are missing or unclear, the proposed course change will be denied.

SYLLABUS CHECKLIST FOR ALL UAF COURSES
During the first week of class, instructors will distribute a course syllabus. Although modifications may be made throughout the semester, this document will contain the following information (as applicable to the discipline):

1. **Course information:**
   - Title, number, credits, prerequisites, location, meeting time
   (make sure that contact hours are in line with credits).

2. **Instructor (and if applicable, Teaching Assistant) information:**
   - Name, office location, office hours, telephone, email address.

3. **Course readings/materials:**
   - Course textbook title, author, edition/publisher.
   - Supplementary readings (indicate whether required or recommended) and any supplies required.

4. **Course description:**
   - Content of the course and how it fits into the broader curriculum;
   - Expected proficiencies required to undertake the course, if applicable.
   - Inclusion of catalog description is strongly recommended, and
   - Description in syllabus must be consistent with catalog course description.

5. **Course Goals (general) and Student Learning Outcomes (more specific)**

6. **Instructional methods:**
   - Describe the teaching techniques (eg: lecture, case study, small group discussion, private instruction, studio instruction, values clarification, games, journal writing, use of Blackboard, audio/video conferencing, etc.).

7. **Course calendar:**
   - A schedule of class topics and assignments must be included. Be specific so that it is clear that the instructor has thought this through and will not be making it up on the fly (e.g. it is not adequate to say “lab”. Instead, give each lab a title that describes its content). You may call the outline Tentative or Work in Progress to allow for modifications during the semester.

8. **Course policies:**
   - Specify course rules, including your policies on attendance, tardiness, class participation, make-up exams, and plagiarism/academic integrity.

9. **Evaluation:**
   - Specify how students will be evaluated, what factors will be included, their relative value, and how they will be tabulated into grades (on a curve, absolute scores, etc.)

10. **Support Services:**
    - Describe the student support services such as tutoring (local and/or regional) appropriate for the course.

11. **Disabilities Services:**
    The Office of Disability Services implements the Americans with Disabilities Act (ADA), and insures that UAF students have equal access to the campus and course materials.
    - State that you will work with the Office of Disabilities Services (203 WHIT, 474-7043) to provide reasonable accommodation to students with disabilities.
Course Syllabus
CITS 240 System and Network Services Administration
University of Alaska Fairbanks

Course Information
Course Number-Section, Title: CITS 240 System and Network Services Administration
Number of Credits: 3.0
Prerequisite: CITS F204 or 241 or instructor permission.
Recommended: CITS F212 or equivalent skills.
Class Location: UAF Downtown Center, Room 210
Meeting Days & Time: Thursday, 6:00-9:00 PM, 9/4 – 12/18.
This course will consist of one 3-hour class lecture delivered to students once a week for 14 weeks. Students can expected to spend an additional six to nine hours per week outside of scheduled classroom lecture studying lecture material, completing reading assignments and homework. A final exam will be given during the 15th week.

Instructor Information
Name: Keith Swarner
Office Location: UAF Downtown Center, 510 Second Ave, Fairbanks AK, room 210B
Office Hours: 2:00 pm – 4:30 pm Monday, Tuesday and Thursday or by appointment
Telephone: 455-2820
Email: keith.swarner@uaf.edu

Course Readings/Materials
Required textbook/materials:

Title: Implementing, Managing, and Maintaining a Microsoft Windows Server 2003 Network Infrastructure (70-291)
Author: Greg Bott
Publisher: Microsoft Press
ISBN: 0-07-294488-9

Course Description
This course teaches students how to implement and administer the core network services operating within a network environment. Topics include: DHCP, DNS, remote access, file and print, Web, update and patch management, security and network management services. Students will develop a conceptual understanding of each network service and learn how to plan, implement, and administer each service.

Course Goals
Upon successful completion of this course, the student will be able to define, explain, or perform tasks related to the following:
1. Dynamic Host Configuration Protocol (DHCP)
2. Domain Name System (DNS)
3. Network Security
4. IP Security (IPSec)
5. Routing and Remote Access Service (RRAS)
6. Maintaining a Network Infrastructure
Student Learning Outcomes
Upon successful completion of this course, the student will be able to:

1.1. Describe the purpose of the Dynamic Host Configuration Protocol (DHCP) and how it streamlines network administration
1.2. Explain the Internet Protocol (IP) address DHCP lease process
1.3. Authorize a DHCP server and explain how unauthorized DHCP servers are prevented from distributing incorrect addresses to DHCP clients
1.4. Configure a DHCP server by defining a scope and a superscope, creating DHCP client reservations, and configuring DHCP options
1.5. Explain the purpose of, and configure, a DHCP relay agent
1.6. Describe the importance and best practices of managing a DHCP server
1.7. Manage a DHCP database by performing the following tasks: backing up and restoring, compacting a DHCP database, and reconciling a DHCP database
1.8. Monitor a DHCP database by creating and viewing a DHCP audit log, creating a DHCP performance baseline, viewing DHCP server and scope statistics, and creating DHCP performance alerts

2.1. Describe the process of name resolution and why it is important to an organization
2.2. Install and configure the Domain Name System (DNS)
2.3. Describe and configure primary zones, secondary zones, in-addr.arpa zones, and stub zones
2.4. Create an Active Directory–integrated zone, and explain the benefits of doing so
2.5. Describe the different types of DNS servers and the functions they perform
2.6. Explain the benefits of delegating a zone, and create a delegated zone
2.7. Describe the process of a zone transfer
2.8. Use management tools to configure the DNS including Nslookup, DNSLint, and Dnscmd
2.9. Define DNS and Windows Internet Naming Service (WINS) integration and explain how host names and the network basic input/output system (NetBIOS) names fit into DNS and WINS integration
2.10. Configure options available on the Advanced tab of the DNS Server Properties dialog box
2.11. Explain how outdated resource records are aged and scavenged and initiate the aging and scavenging process
2.12. Display and purge the DNS resolver cache
2.13. Secure DNS objects in Active Directory directory service
2.14. Use the Event Log, DNS debug log, and Active Directory replication monitor to monitor and troubleshoot DNS

3.1. Describe the network security protocols used for authorization
3.2. Assign user rights and understand the difference between a user rights and permissions
3.3. List and describe the security configuration tools included with Windows Server, and understand how the security configuration tools are used to configure security settings
3.4. Describe and implement the principle of least privilege
3.5. Implement security baseline settings and audit security settings using security templates
3.6. Use the Encrypting File System (EFS) to encrypt and decrypt files using the Windows graphical user interface (GUI) and the command line.
3.7. Identify and run the Microsoft Baseline Security Analyzer (MBSA) and use the results to increase the level of security on your computers
4.1. Identify and explain the major components and concepts of Internet Protocol security (IPSec) including security associations, header protocols, Internet Key Exchange (IKE), the role of the IPSec Policy Agent and IPSec driver, and the security negotiation process.

4.2. Understand the role the Authentication Header (AH) protocol and the Encapsulating Security Payload (ESP) protocol play in providing confidentiality and authentication.

4.3. Add or modify IPSec security policies using the IP Security Policy Management console.

4.4. Determine when to use AD directory service or local policies when deploying IPSec.

4.5. Use tools to manage, monitor, and troubleshoot IPSec. These tools include IP Security Monitor, the IP Security Policy Management console, Resultant Set of Policy (RSoP), Event Viewer, Netsh, and the Oakley log.

4.6. Understand why you would use certificates with IPSec to secure network traffic.

4.7. Describe the process of certificate enrollment.

4.8. Configure IPSec to use certificates.

4.9. Explain the issues associated with Network Address Translation (NAT) when using IPSec and identify the methods Windows Server uses to solve those issues.

4.10. Use Netsh to manage and monitor IPSec.

5.1. Configure a Windows Server to act as a local area network (LAN) router.

5.2. Configure and troubleshoot dial-up and virtual private network (VPN) remote access.

5.3. Understand how NAT works and how to configure it.

5.4. Manage routing protocols, routing tables, and routing ports.

5.5. Describe how a routing table routes packets, and view the routing table using the command prompt and the Routing and Remote Access console.

5.6. Configure and manage packet filters.

5.7. Configure demand-dial routing, and describe when demand-dial routing is most appropriate.

5.8. Configure Routing and Remote Access policies to permit or deny access.

5.9. Centralize network access authentication and polices using Remote Authentication Dial-In User Service (RADIUS) and Internet Authentication Service (IAS).

5.10. Differentiate between and select the most appropriate form of remote access authentication.

6.1. Use the Networking tab in Task Manager to view network activity.

6.2. Monitor network traffic.

6.3. Find and set alerts using the Performance console.

6.4. Capture specific data using the Network Monitor utility included with Windows Server.

6.5. Troubleshoot connectivity to the Internet.

6.6. Troubleshoot server services using the Service utility and Event Viewer.

6.7. Use service recovery options to diagnose and resolve service-related issues.

6.8. Diagnose and resolve issues related to service dependency.

**Instructional Methods**

This course teaches students through lectures, demonstrations, instructor-led discussions and project-based learning. Students are expected to complete required reading assignments prior to each lecture. Students are expected to complete assigned homework during the week that follows that topic’s lecture and to arrive prepared to discuss homework at the beginning of the following week’s class.
Course Policies

Attendance: You are expected to attend classes regularly; unexcused absences may result in a failing grade. You are responsible for coordinating absences and the possibility of arranging to make up missed work with the instructor prior to the absence.

If an unforeseen circumstance prevents you from attending class you are expected to contact the instructor via email or phone prior to the start of the next class.

If you are required to participate in either (a) military or (b) UAF-sponsored activities that will cause you to miss class, you must notify your instructor as soon as possible of your absence. You must notify your instructor of all scheduled UAF-required absences for the semester (e.g., travel to athletic events) during the first week of classes.

Late Assignments: Late assignments will not be accepted unless arranged with the instructor.

Important Dates: Check the UAF Academic Calendar for important dates related to fee payment, class registration and last day to drop courses. The calendar can be viewed online at: http://www.uaf.edu/catalog/current/acad_calendar.html

Plagiarism/Academic integrity: Plagiarism and cheating are serious offenses and may result in failure on exams, papers, projects, or courses.

Support Services
The TVC Student Assistance and Advising Center provides services that contribute to a successful learning experience and transition to a career. TVC Student Assistance and Advising Center staff recognizes the unique concerns of adult and returning students. Services include pre-admission advising, academic assessment and placement advising, financial aid information and application, and assistance with choosing a major. Students can receive ongoing academic advising, degree planning and assistance with course selections.

Services are available by appointment and on a walk-in basis. Appointments can be scheduled by calling 455-2800 or students can go to the UAF Tanana Valley Campus Center, 604 Barnette Street, room 110.

Disability Services
The UAF Office of Disability Services implements the Americans with Disabilities Act (ADA), and insures that UAF students have equal access to the campus and course materials. The instructor will work the Office of Disability Services to provide reasonable accommodations to students with disabilities that have been documented through the UAF Office of Disability Services. Information about available services is available online at http://www.uaf.edu/chc/disability.html. The office can be reached by phone at 474-7043 or students can go to 203 WHIT on the UAF main campus.
**Evaluation:**
Final grades are calculated from the points earned in the following areas:

**Chapter Quizzes** .................................................................................................................... 15%
Chapter Quizzes are designed to reinforce and measure retention of information covered in reading assignments and in lecture. Chapter quizzes will be available at the class Blackboard site must be completed outside of class the week following the completion of the class lecture for that chapter.

**Chapter Review Questions** ................................................................................................... 10%
Review questions at the end of each chapter related to planning, implementing, and administering server and network services are designed to promote critical reflection. Students will write up their answers in a Word document and post the completed document to Blackboard.

**Scenario Projects** ................................................................................................................... 30%
Scenario projects will require students to plan, implement, configure, and document network services studied in this course. There will be a total of six projects.

- Project 1: Implementing and Managing DHCP
- Project 2: Implementing and Managing DNS
- Project 3: Using Security Templates and Security Configuration Tools
- Project 4: Securing Network Traffic with IPSec
- Project 5: Implementing and Configuring Remote Access Services
- Project 6: Implementing and Configuring Routing

**Final Exam** ............................................................................................................................. 45%
The final exam will consist of two parts. Part 1 is a comprehensive written exam designed to provide an assessment of the student’s use and retention of course material covered in weeks 1-14. Part 2 is a scenario-based problem designed to provide an assessment of the student’s ability to apply the skills and knowledge covered in weeks 1-14 of the course.

Letter grades for the course will be determined as follows and will reflect the *Grading System and Grade Point Average Computation* policy stated in the current UAF Catalog.

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<thead>
<tr>
<th>Grade</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>A+</td>
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<td>A-</td>
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<td>72.9–70%</td>
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<tr>
<td>D+</td>
<td>69–67%</td>
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<td>D</td>
<td>66.9–63%</td>
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**Withdrawal** – Course withdrawals may be either student-initiated or faculty-initiated. A faculty-initiated withdrawal will be initiated if you don't meet prerequisites for a course or if you haven't participated substantially in the course. An attempt will be made to contact students prior to initiating a faculty-initiated withdrawal. It is the responsibility of the student to maintain current contact information (phone number and email address) within UA Online system.

**Incomplete** - An incomplete is a temporary grade used to indicate that the student has satisfactorily completed (C or better) the majority of work in a course but for personal reasons beyond the student’s control, such as sickness, has not been able to complete the course during the regular semester. An incomplete will only be assigned in a case when the student is current in the class until at least the last three weeks of the course. Negligence or indifference is not acceptable reasons for an “I” grade. If an incomplete is assigned, it must be made up within one year or it will automatically be changed to an “F” grade.
Course Calendar:
The following course calendar provides a weekly schedule of major course topics, reading assignments, homework assignments, and quizzes and exams. Students are expected to complete the reading assignment prior to the week in which the assignment is listed.

Week 1 – Class 1, Mon. 9/8  
Topics: Overview of Networking Models; Monitoring Network Connectivity—ping, Network Monitor, capturing network traffic; Components of an IP Address; IP Address Classes, Numbering Systems Used in IP Addresses and Converting IP Addresses; Determining Valid IP Addresses; Components of a Subnet Mask; Subnets; Subnet IP Addresses; Binary ANDing; Calculating Custom Subnet Masks; Routers; Routing Table; The Default Gateway  
Reading Assignment:  
- e-Learning Course 2276: Module 1 Review of TCP/IP Protocols  
- e-Learning Course 2276: Module 2 Assigning IP Addresses in a Multiple Subnet Network

Week 2 – Class 2, Mon. 9/15  
Topics: Static and Dynamic Addressing; TCP/IP Properties Dialog Box; Assigning and Verifying Static IP Addresses; DHCP Overview and Process; DHCP Lease Renewal Process; Configuring DHCP Clients; DHCP Server Authorization; DHCP Scope Overview and Configuration; DHCP Reservations; DHCP Options—Server, Scope, Reserved DHCP Options; DHCP Relay Agent  
Reading Assignment:  
- e-Learning Course: 2276: Module 3 Configuring a Client IP Address  
- e-Learning Course: 2277: Module 2 Allocating IP Addresses Using DHCP  
- Textbook: Chapter 1 Implementing DHCP

Review Questions: Review Questions from Chapter 1 Implementing DHCP  
Chapter Quiz: Quiz 1 Implementing DHCP

Week 3 – Class 3, Mon. 9/22  
Topics: DHCP Database; Backing Up and Restoring DHCP Databases; Reconciling a DHCP Database; Compacting a DHCP Database; Server-based Conflict Detection; DHCP Statistics to Monitor a DHCP Server; DHCP Audit Log; Using the Performance Console to Monitor DHCP; Automatic Private IP Addressing (APIPA)  
Reading Assignment:  
- e-Learning Course 2277: Module 3 Managing and Monitoring DHCP  
- Textbook: Chapter 2 Managing and Monitoring DHCP

Review Questions: Review Questions from Chapter 2 Managing and Monitoring DHCP  
Chapter Quiz: Quiz 2 Managing and Monitoring DHCP

Week 4 – Class 4, Mon. 9/29  
Scenario Project: Project 1: Implementing and Managing DHCP
Week 5 – Class 5, Mon. 10/6
Topics: Name Resolution Process; Address Resolution Protocol (ARP); ARP Cache; ARP Utility; Host Names and NetBIOS Names; Host Names and NetBIOS Name Resolution; DNS Domain Namespace; Installing DNS Server Service; Configuring DNS Zones; Zone Types; Resource Record Types; Zone Transfers; DNS Dynamic Updates; DNS Client Configuration; DNS Zone Delegation
Reading Assignment:
• e-Learning Course 2276: Module 4 Configure a Client for Name Resolution
• e-Learning Course: 2277: Module 4 Resolving Names
• e-Learning Course: 2277: Module 5 Resolving Host Names Using DNS
• Textbook: Chapter 3 Implementing Name Resolution Using DNS
Review Questions: Review Questions from Chapter 3 Installing & Configuring the DNS Service
Chapter Quiz: Quiz 3 Implementing Name Resolution Using DNS

Week 6 – Class 6, Mon. 10/13
Topics: DNS Management Tools—DNS Console, Nslookup, DNSLint, Dnscmd, Integrating DNS Zones with WINS, Aging and Scavenging Resource Records, DNS Resolver Cache, Securing DNS, DNS Server Performance, Monitoring and Troubleshooting DNS
Reading Assignment:
• e-Learning Course: 2277: Module 6 Managing and Monitoring DNS
• Textbook: Chapter 4 Managing and Monitoring DNS
Review Questions: Review Questions from Chapter 4 Managing and Monitoring DNS
Chapter Quiz: Quiz 4 Managing and Monitoring DNS

Week 7 – Class 7, Mon. 10/20
Scenario Project: Project 2: Implementing and Managing DNS

Week 8 – Class 8, Mon. 10/27
Topics: Active Directory Services Overview; Group Policy Object (GPO) Overview; User Rights; Security Baselines; Security Audit Logs; Principle of Least Privilege; Security Templates; Security Templates Snap-in; Encrypting File System (EFS); Security Configuration Tools—Security Configuration and Analysis Snap-in, Secedit Utility, Security Templates Snap-in, Gpupdate
Reading Assignment:
• Textbook: Chapter 5 Network Security
Review Questions: Review Questions from Chapter 5 Network Security
Chapter Quiz: Quiz 5 Network Security

Week 9 – Class 9, Mon. 11/3
Topics: IPSec Overview, IPSec Security Policies, Default IPSec Policies, Deploying IPSec, Balancing Security and Performance, IPSec and Certificates, Monitoring IPSec
Reading Assignment:
• e-Learning Course: 2277: Module 8 Securing Network Traffic by Using IPSec and Certificates
• Textbook: Chapter 6 Securing Network Traffic with IPSec
Review Questions: Review Questions from Chapter 6 Securing Network Traffic by Using IPSec
Chapter Quiz: Quiz 6 Securing Network Traffic with IPSec
Week 10 – Class 10, Mon. 11/10
Project 4: Securing Network Traffic with IPSec

Week 11 – Class 11, Mon. 11/17
Topics: Overview of Routing and Remote Access Service (RRAS); Routing and Routing Protocols; Enabling and Configuring RRAS; Selecting Routing Protocols—Static, RIP and OSPF; Routing Table Management; Implementing and Configuring Packet Filterers; Demand-Dial Routing
Reading Assignment:
- e-Learning Course: 2277: Module 1 Configuring Routing by Using Routing and Remote Access
- Textbook: Chapter 8 Configuring Routing by Using Routing and Remote Access

Review Questions: Review Questions from Chapter 8 Configuring Routing and Remote Access
Chapter Quiz: Quiz 8 Configuring Routing by Using Routing and Remote Access

Week 12 – Class 12, Mon. 11/24
Topics: Network Access Infrastructure Components; Network Access Server Configuration; Network Access Client, Authentication and Authorization Methods; VPN Connection Components, How a VPN Connection Works, VPN Encryption Protocols; Remote Access Policies; Remote Authentication Dial In User Service (RADIUS) and Internet Authentication Service (IAS); Monitoring Remote Access
Reading Assignment:
- e-Learning Course: 2277: Module 9 Configuring Network Access
- e-Learning Course: 2277: Module 10 Managing Network Access

Week 13 – Class 13, Mon. 12/1
Scenario Project: Project 5: Implementing and Configuring Remote Access Services
Project 6: Implementing and Configuring Routing

Week 14 – Class 14, Mon. 12/8
Topics: TCP/IP Diagnostic Tools—Nslookup, Host Command; Netstat; Tracert Command, Pathping, Ping, NetDiag, and Netsh; Network Monitoring with Task Manager and Performance Console; Troubleshooting Internet Connectivity and Common Problems; Troubleshooting Process
Reading Assignment:
- e-Learning Course: 2276: Module 5 Isolating Common Connectivity Issues
- Textbook: Chapter 9 Maintaining a Network Infrastructure

Review Questions: Review Questions from Chapter 9 Maintaining a Network Infrastructure
Chapter Quiz: Quiz 9 Maintaining a Network Infrastructure

Week 15 – Class 15, Mon. 12/15
Final Exam: The final exam will consist of two parts. Part 1 is a comprehensive written exam designed to provide an assessment of the student’s use and retention of course material covered in weeks 1-14. Part 2 is a scenario-based problem designed to provide an assessment of the student’s ability to apply the skills and knowledge covered in weeks 1-14 of the course.

Part 1 of the final exam will be administered during the first 60 minutes of class. Students will begin Part 2 upon completion of their written final exam.