Computer and Information Technology Systems (CITS)

Community and Technical College
Computer & Information Technology Systems Program (https://www.ctc.uaf.edu/its/)
907-455-2800

CITS F201   Operating Systems Support
1-3 Credits
Offered As Demand Warrants
Comprehensive exploration of a current operating system: use, configuring, installing and administering. Topics include end-user and technical support.
Recommended: CIOS F150 or equivalent skills.
Lecture + Lab + Other: 1-3 + 0 + 0
Grading System: Letter Grades with option of Plus/Minus
Repeatable for Credit: May be taken 3 times for up to 3 credits

CITS F202   Microcomputer Hardware Support
1-3 Credits
Offered As Demand Warrants
Fundamental hardware and software (associated with hardware) configuration and troubleshooting. Includes installing, removing and configuring computer hardware components; installing and configuring software applications and operating systems to support hardware; diagnosing hardware and software problems; and developing troubleshooting and configuration procedures.
Recommended: CITS F201 or equivalent skills.
Lecture + Lab + Other: 1-3 + 0 + 0
Grading System: Letter Grades with option of Plus/Minus
Repeatable for Credit: May be taken 3 times for up to 3 credits

CITS F203   Information Technology Support Fundamentals
4 Credits
Offered As Demand Warrants
Overview of skills/knowledge required by professional computer support technicians to support/troubleshoot computer operating systems and computer hardware. Includes: purpose and function of internal computer components, how to assemble a computer system, how to install an operating system, basic skills/knowledge required to connect to and share resources in a network environment.
Recommended: CIOS F150 or equivalent skills.
Special Notes: Course covers objectives defined for CompTIA A+ certification.
Lecture + Lab + Other: 4 + 0 + 0
Grading System: Letter Grades with option of Plus/Minus

CITS F204   Introduction to Computer Networks
3 Credits
Offered As Demand Warrants
This foundational course introduces several ways that computers interact and the tools used in analysis and troubleshooting. Examples include local and wide area networks, also known as LANs and WANs; the "internet of things"; and cloud computing. Networking careers may also be explored. CITS F203 may be taken concurrently.
Lecture + Lab + Other: 3 + 0 + 0
Grading System: Letter Grades with option of Plus/Minus

CITS F205   Introduction to Coding and Programming
1-3 Credits
Offered As Demand Warrants
Computer programming focused on programming concepts with programming tools.
Prerequisites: Math placement at the 100-level.
Lecture + Lab + Other: 1-3 + 0 + 0
Grading System: Letter Grades with option of Plus/Minus
Repeatable for Credit: May be taken 3 times for up to 3 credits

CITS F212   Server Operating Systems
3 Credits
Offered As Demand Warrants
Fundamentals in installing, configuring and maintaining server operating systems. Learn how to configure and administer network accounts, resources, and common services deployed on server operating systems. Course covers foundation server operating system knowledge required for Microsoft Certified Solutions Associate (MCSA) certification exams related to server technologies.
Prerequisite: CITS F204 (may be taken concurrently) or equivalent skills.
Lecture + Lab + Other: 3 + 0 + 0
Grading System: Letter Grades with option of Plus/Minus

CITS F219   Operating Systems: Topics
1-4 Credits
Offered As Demand Warrants
In-depth and comprehensive technical class covering operating system skills and concepts.
Recommended: CITS F203 or equivalent skills.
Lecture + Lab + Other: 1-4 + 0 + 0
Grading System: Letter Grades with option of Plus/Minus
Repeatable for Credit: May be taken 6 times for up to 6 credits

CITS F220   Implementing Internet Tools and Technologies
3 Credits
Offered As Demand Warrants
Exploration of advanced Internet topics. Building a presence on the Internet — evaluate web hosting services, domain names and registration services. How to implement and understand web communication tools and develop and understand the impact of participating in social networks and the changing nature of these networks.
Recommended: CIOS F150 or equivalent skills.
Lecture + Lab + Other: 3 + 0 + 0
Grading System: Letter Grades with option of Plus/Minus

CITS F221   Graphics and Multimedia for the Web
3 Credits
Offered As Demand Warrants
Creating graphics and multimedia content for the Web. Graphic topics include formats, size and resolution, optimization and design fundamentals. Multimedia topics include animation, interactivity and combining sound, speech, graphics, photographs and video.
Recommended: CIOS F150 or equivalent skills.
Lecture + Lab + Other: 3 + 0 + 0
Grading System: Letter Grades with option of Plus/Minus

**CITS F222	Website Design**
1-3 Credits
Offered As Demand Warrants
A comprehensive survey of professional website design and authoring tools used to create Internet websites. Topics include website design and planning, HTML and CSS.
Recommended: CIOS F150 or equivalent skills.
Lecture + Lab + Other: 1-3 + 0 + 0
Grading System: Letter Grades with option of Plus/Minus
Repeatable for Credit: May be taken 3 times for up to 3 credits

**CITS F224	Web Scripting**
3 Credits
Offered As Demand Warrants
Introduction to client-side Web page scripting. Covers basic programming concepts, including data representation, functions, control structures and arrays. Topics include client-side scripting with JavaScript, object-oriented JavaScript, design issues, error handling, security, the Document Object Model and dynamic HTML and AJAX.
Prerequisite: CITS F205 or CS F103; CITS F222; or equivalent skills.
Lecture + Lab + Other: 3 + 0 + 0
Grading System: Letter Grades with option of Plus/Minus

**CITS F225	Web Databases and Programming**
3 Credits
Offered As Demand Warrants
Programming and database design as it relates to creating dynamic web sites and applications. Develop web applications to automate websites, create and access web databases, provide tools for users to modify parts of their own website, create and access files on the fly and reduce repetitive maintenance.
Prerequisites: CITS F205 or CS F103; CITS F222; or equivalent skills.
Special Notes: Course topics include CSS, SSI, DHTML, SQL, PHP and other web technologies.
Lecture + Lab + Other: 3 + 0 + 0
Grading System: Letter Grades with option of Plus/Minus

**CITS F228	Advanced Website Design and Development**
3 Credits
Offered As Demand Warrants
Plan and implement professional and comprehensive websites that utilize and integrate multiple website design and development technologies such as XHTML, CSS, XML, Ajax, Web APIs, client-side and server-side programming, graphics and multimedia, and web communication tools.
Prerequisites: CITS F221; CITS F222; CITS F224; CITS F225; or equivalent skills.
Lecture + Lab + Other: 3 + 0 + 0
Grading System: Letter Grades with option of Plus/Minus

**CITS F240	System and Network Services Administration**
3 Credits
Offered As Demand Warrants
Implement and administer core network services operating within a network environment. Topics include: WSUS, WDS, DHCP, DNS, remote access, file and print, security and network management services. Course covers system and network services objectives required for Microsoft Certified Solutions Associate (MCSA) certification exams related to server technologies.
Prerequisites: CITS F212 (may be taken concurrently) or equivalent skills.
Lecture + Lab + Other: 3 + 0 + 0
Grading System: Letter Grades with option of Plus/Minus

**CITS F241	Networking and LAN Infrastructure Basics**
4 Credits
Offered As Demand Warrants
The first of three courses (with CITS F242 and CITS F243) providing coverage of networking topics designed to prepare students for the CCNA certification exam. Covers the OSI and Internet models, IPv4 and IPv6 addressing, and network security fundamentals, while providing hands-on practical experience and career skills.
Lecture + Lab + Other: 4 + 0 + 0
Grading System: Letter Grades with option of Plus/Minus

**CITS F242	Routing and Switching Essentials**
4 Credits
Offered As Demand Warrants
Second of three courses providing integrated coverage of networking topics designed to prepare students for the CCNA certification exam. Covers an in-depth study of the network switching concepts, VLANS, STP, DHCP, SLAC and DHCPv6 addressing, LAN security, and an introduction to routing concepts while providing learners for hands-on practical experience.
Prerequisites: CITS F241.
Lecture + Lab + Other: 4 + 0 + 0
Grading System: Letter Grades with option of Plus/Minus

**CITS F243	Intermediate Networking and LAN Infrastructure**
4 Credits
Offered As Demand Warrants
Third of three courses providing coverage of networking topics designed to prepare students for the CCNA certification exam. Covers network routing concepts, including OSPF, ACL concepts, WAN, VPN and IPSEC, QoS, and network design, troubleshooting, virtualization and automation, while providing opportunities for hands-on, practical experience and career skills development.
Prerequisites: CITS F241.
Lecture + Lab + Other: 4 + 0 + 0
Grading System: Letter Grades with option of Plus/Minus

**CITS F244	Advanced Network Infrastructure Services**
4 Credits
Offered As Demand Warrants
Covers the architecture, components and operations of cloud-based computer systems. Covers topics that prepare students for the AWS cloud foundations certification as well as other cloud formats.
Prerequisites: CITS F241.
Lecture + Lab + Other: 4 + 0 + 0
Grading System: Letter Grades with option of Plus/Minus

**CITS F245	Cloud Computing Foundations**
3 Credits
Offered As Demand Warrants
Cloud Computing Foundations is intended for students who seek an overall understanding of cloud computing concepts, independent of specific technical roles. It provides a detailed overview of cloud concepts, Amazon Web Services (AWS) core services, security, architecture, pricing and support. Students will study AWS and other cloud computing models.
Prerequisites: CITS F204.
Recommended: CITS F203, CITS F212, CITS F241.
Lecture + Lab + Other: 3 + 1 + 0
Grading System: Letter Grades with option of Plus/Minus

CITS F249   Networking and Communications: Topics
1-4 Credits
Offered As Demand Warrants
In-depth technical and comprehensive coverage of networking and communications skills and concepts.
Recommended: CITS F204 or equivalent skills.
Lecture + Lab + Other: 1-4 + 0 + 0
Grading System: Letter Grades with option of Plus/Minus
Repeatable for Credit: May be taken 6 times for up to 6 credits

CITS F261   Computer and Network Security
3 Credits
Offered As Demand Warrants
The fundamental concepts of computer and network security. Course topics include: understanding threats to a computing infrastructure, understanding encryption technologies, securing network communications and applications, security policies and responding to incidents. Course covers objectives defined for CompTIA Security+ certification.
Prerequisites: CITS F204 or equivalent skills.
Lecture + Lab + Other: 3 + 0 + 0
Grading System: Letter Grades with option of Plus/Minus

CITS F262   Cybersecurity Defense and Countermeasures
3 Credits
Focus on network and information systems security from a defensive point of view. Students learn how to analyze internal/external security threats, develop security policies and implement security measures to protect information within an enterprise. Topics include risk assessment, security policies and procedures, incident response, cryptographic services, network and host-based security.
Prerequisites: CITS F261 or equivalent skills.
Lecture + Lab + Other: 3 + 0 + 0
Grading System: Letter Grades with option of Plus/Minus

CITS F263   Network Security Penetration Testing
3 Credits
Offered As Demand Warrants
Course focuses on network and information systems security from an offensive point of view. Students will learn technical testing and examination techniques used to identify, validate and assess technical vulnerabilities within an enterprise. Topics include penetration testing methodology, footprinting and reconnaissance, scanning and enumeration, vulnerability validation, data collection and reporting.
Prerequisites: CITS F261 or equivalent skills.
Lecture + Lab + Other: 3 + 0 + 0
Grading System: Letter Grades with option of Plus/Minus

CITS F265   Directory Services Administration
3 Credits
Offered As Demand Warrants
Creation and configuration of directory service objects to manage access to network resources, implement and manage group policy objects, and to backup, restore, monitor and troubleshoot directory service related issues. Course covers advanced directory services administration objectives required for Microsoft Certified Solutions Associate (MCSA) certification exams related to server technologies.
Prerequisite: CITS F212 (may be taken concurrently) or equivalent skills.
Lecture + Lab + Other: 3 + 0 + 0
Grading System: Letter Grades with option of Plus/Minus

CITS F281   Professional Practices in IT
1-3 Credits
Offered As Demand Warrants
Prepares students for work as an IT professional. Topics include: providing computer technical support, user support management, soft skills in IT, resume writing and career exploration, diagnosing problems, researching and documenting solutions, meeting user needs, developing training materials and giving workshops and lessons.
Prerequisites: 24 credits in CITS courses.
Lecture + Lab + Other: 1-3 + 0 + 0
Grading System: Letter Grades with option of Plus/Minus

CITS F282   IT Troubleshooting Skills
1-3 Credits
Offered As Demand Warrants
Practical IT troubleshooting skills, including hardware, software, networks and operating systems. The course will include practical and useful troubleshooting scenarios.
Prerequisites: CITS F203; CITS F204 or equivalent skills.
Lecture + Lab + Other: 1-3 + 0 + 0
Grading System: Letter Grades with option of Plus/Minus

CITS F284   Independent Project
1-3 Credits
Offered As Demand Warrants
Student created project or internship that includes learning new skills, applying the skills to significant problems, and demonstrating the results to other computer users. Includes application of learned skills in a professional manner.
Prerequisites: 12 credits in CITS courses.
Lecture + Lab + Other: 1-3 + 0 + 0
Grading System: Letter Grades with option of Plus/Minus
Repeatable for Credit: May be taken 3 times for up to 3 credits

CITS F285   Cooperative Work Experience
3 Credits
Offered As Demand Warrants
On-the-job training related to occupational objectives. Weekly seminar with coordinator required.
Prerequisites: 12 credits in CITS courses.
Lecture + Lab + Other: 3 + 0 + 0
Grading System: Letter Grades with option of Plus/Minus

CITS F288   Professional Certification Review
1-3 Credits
Offered As Demand Warrants
Prepares students for national or industry specific certification examination.
Lecture + Lab + Other: 1-3 + 0 + 0
Grading System: Letter Grades with option of Plus/Minus
Repeatable for Credit: May be taken 3 times for up to 3 credits

CITS F289   Information Technology: Topics
1-3 Credits
Offered As Demand Warrants
Comprehensive coverage of a specific information technology topic.
Recommended: CITS F203 or equivalent skills.
Lecture + Lab + Other: 1-3 + 0 + 0
Grading System: Letter Grades with option of Plus/Minus
Repeatable for Credit: May be taken 6 times for up to 6 credits