UNITED INDEPENDENT SCHOOL DISTRICT
AGENDA ACTION ITEM

TOPIC: Request for approval of Renewal of CISCO Networking Academy

SUBMITTED BY: Alicia G. Carrillo   **OF:** CTE Director

APPROVED FOR TRANSMITTAL TO SCHOOL BOARD: _____

DATE ASSIGNED FOR BOARD CONSIDERATION: April 21, 2010

RECOMMENDATION:

Administration recommends that the Board approve the renewal of the CISCO Networking Academy program. CISCO is currently being offered in UISD and will expire at the end of the 2009- 2010 school year.

RATIONALE:

Students who participate in CISCO Networking Academy earn academic credit as well as college credit through the Tech Prep program. Students are trained on designing, installing and maintaining practical, cost-effective networks.

Students will learn the information needed to prepare them with recognized industry-standard training. This program addresses the nation-wide shortage of Information Technology employees. Safety and career opportunities are also included.

BUDGETARY INFORMATION

CISCO I and II does not require additional budgetary considerations as they are funded through the existing Career and Technical Education program budget.

Innovative Course Application 2010-2011 (CISCO I)

Instructions:

1. Complete this application with care, remembering that if the course earns state approval, this application will be made available on the internet and may be accessed and referenced by the public.

2. Obtain the approval of your local board of trustees prior to submitting your application.

3. Submit your application via email as an attachment. Use "Innovative Course Application" as your subject line, and address the email to gberryman@esc11.net . **You will receive a confirmation letter.**

Name of applying district or organization: United Independent School District

Complete mailing address: 201 Lindenwood, Laredo, TX 78041

Contact person: Alicia G. Carrillo, CTE Director

Contact person's email address: acarrill@uisd.net

Contact person's phone number, area code first: 956 473-2018

County District Number (if applicant is a Texas school district): 240903

Superintendent (if applicant is a Texas school district): Roberto J. Santos

Date of local board of trustees' approval of this innovative course application: Pending Board Approval, April 2010.

Name of innovative course(s): Internetworking Technologies 1 (Cisco)
(Only if this is an application for multiple levels of the same course may multiple course names be listed here. For example, an applicant may apply for approval of Latin Literature I and Latin Literature II with one submission.)

Number of credits that may be earned: 1-3

SUBMISSION OF THIS FORM:

Please complete this form and submit to:

ESC Region 11

Attention Gay Berryman

3001 N. Freeway

Fort Worth, TX 76106

817 740-3688

gberryman@esc11.net

Brief description of the course (150 words or less):

DISCLAIMER: If a district so chooses, they may offer all four courses leading to the Cisco 640-841 CCNA Exam over the course of 2 years.

This course is the first of two courses leading to the Cisco 640-821 Intro Exam. This course is an introduction to Home and Small Office Networking. In addition, the course provides instruction and training in the proper care, maintenance, and use of networking software, tools, and equipment.

Essential Knowledge and Skills of the course:

Internetworking Technologies (Cisco) 1

(a)   introduction

(1)   Students need to obtain the necessary skills to compete in the global economy. Students will learn hands-on technical skills to help them prepare for IT careers as well as post-secondary IT-related degrees. This course provides students with practical skills in setting up home and small office networks.

(2)   The essential knowledge and skills as well as student expectations for Internetworking Technologies 1 are described in subsection (b) of this section

(b)   Knowledge and Skills

(1)   The student develops a solid foundation in the basics of networking, demonstrating knowledge of important concepts and skills. The student is expected to:

(A)   Define and install the necessary hardware and software required to be able to communicate over a network
(B)   Demonstrate the mathematical skills required to work seamlessly with integer decimal, binary, and hexadecimal numbers and simple binary logic.
(C)   Define the structure and technologies of modern computer networks
(D)   Define the meaning and applications of "bandwidth" as used in networking
(E)   Compare and contrast network communications using the OSI model and the TCP/IP protocol stack
(F)   Describe the major properties and standards associated with copper and optical media used in networks
(G)   Explain the basics of wireless transmission
(H)   Install a simple wireless LAN
(I)   Describe the different topologies and physical issues associated with cabling common LANs
(J)   Describe the physical issues associated with cabling networking equipment to work over a WAN link
(K)   Explain how collisions are detected
(L)   Demonstrate familiarity with IP addressing
(M)   Describe routing concepts

(2)   The student will be able to complete a Case Study to demonstrate his knowledge
(A)   Be able to document the path a circuit travels inside a LAN
(B)   Learn basics of meeting a customer's needs in a networking project.

Description of the specific student needs this course is designed to meet:

Students who successfully complete this class with an 80 or higher and continue in this program at Laredo Community College, can receive college credit for their work in high school. Teachers are strongly encouraged to build local relationships with businesses in order to provide their students with possible internships, job shadowing experiences, on site visits at the work place, and to hear from guest speakers who can introduce them to the workplace culture, and how the skills they are learning fit into the day to day work flow of a business.

The lab setting closely corresponds to a real IT environment and students work with the architecture and infrastructure pieces of technology. As a result, students receive both a strong overview of technology concepts and terminology, and an opportunity to apply that knowledge in an authentic learning environment.

Major resources and materials to be used in the course:

1. Online resources
    1. cisco.netacad.net - the online curriculum is located here along with testing, both chapter and final exams.
    2. Book(s)
        1. CCNA Portable Command Guide - ISBN (978-1-58720-193-6
        2. Optional books
            1. Network Fundamental CCNA Exploration Companion Guide - ISBN 978-1-58713-208-7 (Cisco 1)
            2. Routing Protocols and Concepts CCNA Exploration Companion Guide - ISBN 978-1-58713-206-3

Required activities and sample optional activities to be used:

1. Chapter test (online)
2. Final exam (online)
3. Lab work - in Cisco lab
4. Packet Tracer activities imbedded in curriculum - Packet Tracer is a software package that is published by Cisco and free to Cisco students.
5. WireShark activities - free packet sniffing program used by students to analyze interconnection process.
6. Skills exam - skills based exam used to evaluate students ability to setup, configure and troubleshoot Cisco networks.

Methods for evaluating student outcomes:

1. Chapter tests
2. Lab and Packet Tracer assignments
3. Chapter questions
4. Final exam
5. Skills Exam

Required qualifications of teachers:

Cisco Academy Instructors must complete training at a designated Cisco Training Center.

Innovative Course Application 2010 - 2011 (CISCO 2)

Instructions:

1. Complete this application with care, remembering that if the course earns state approval, this application will be made available on the internet and may be accessed and referenced by the public.

2. Obtain the approval of your local board of trustees prior to submitting your application.

3. Submit your application via email as an attachment. Use "Innovative Course Application" as your subject line, and address the email to gberryman@esc11.net. **You will receive a confirmation letter.**

Name of applying district or organization: United ISD

Complete mailing address: 201 Lindenwood

Contact person: Alicia G. Carrillo, CTE Director

Contact person's email address: acarrill@uisd.net

Contact person's phone number, area code first: 956 473-2018

County District Number (if applicant is a Texas school district): 240-903

Superintendent (if applicant is a Texas school district): Roberto J. Santos

Date of local board of trustees' approval of this innovative course application: Pending Board Approval, April 2010.

Name of innovative course(s): Internetworking Technologies 2 (Cisco)

Number of credits that may be earned: 1-3

SUBMISSION OF THIS FORM:

Please complete this form and submit to:

ESC Region 11
Attention Gay Berryman
3001 N. Freeway
Fort Worth, TX 76106
817 740-3688
gberryman@esc11.net

Brief description of the course (150 words or less):

DISCLAIMER: If a district so chooses, they may offer all four courses leading to the Cisco 640-841 CCNA Exam over the course of 2 years.

This course is the second of two courses leading to the Cisco 640-821 Intro. Exam. CISCO 2 provides students with skills to network a small to medium business or an Internet Service Provider (ISP). In addition, the course provides instruction and training in planning, designing, installing, operating, and troubleshooting networks.

Essential Knowledge and Skills of the course:

Internetworking Technologies 2 (Cisco)

(a)   Introduction

    (1)   Students need to obtain the necessary skills to compete in a global economy. Students will learn hands-on technical skills to help them prepare for IT careers as well as post-secondary IT-related degrees. This course provides students with practical skills in networking small and medium businesses

    (2)   The essential knowledge and skills as well as student expectations for Internetworking Technologies 2 are described in subsection (b) of this section

(b)   Knowledge and Skills

    (1) The student develops a solid foundation in routing, demonstrating knowledge of important concepts and skills. The student is expected to:

        (A)   Describe the role of a router in a LAN/WAN environment.
        (B)   Explain the fundamental operation of the router operating system (IOS)
        (C)   Use this IOS for router analysis, configuration, and repair
        (D)   Configure basic levels of security for a LAN.
        (E)   Connect the proper cabling to a router.
        (F)   Perform, save, and test an initial configuration on a router
        (G)   Manage the system image and configuration files.
        (H)   Identify, configure, and verify the use of static and default routes
        (I)   Use proper IOS commands to analyze and rectify network problems.
        (J)   Identify how router throughput traffic can be controlled with access lists.

    (2)   The student will be able to complete a Case Study to demonstrate his knowledge

        (A)   Be able to build and troubleshoot a network given a scenario.
        (B)   Learn basics of meeting a customer's needs in a networking project.

Description of the specific student needs this course is designed to meet:

Students who successfully complete this class with an 80 average or higher and continue in this program at Laredo Community College (LCC), can receive college credit from LCC for their work in high school through the Tech Prep program.

Teachers are strongly encouraged to build local relationships with businesses in order to provide their students with possible internships, job shadowing experiences, on-site visits at the work place, and to provide guest speakers who can introduce students to the workplace culture, and how the skills students are learning fit into the day to day work flow of a business.

The design and implementation of the curriculum has provided a means to meet the challenge of educating a wide variety of learners in the use of technology. The curriculum goes beyond traditional computer-based instruction by integrating practical knowledge and skills in a hands-on environment. In a lab setting that closely corresponds to a real IT environment, students work with the architecture and infrastructure pieces of technology. As a result, students receive both a strong overview of technology concepts and terminology, and an opportunity to apply that knowledge in an authentic learning environment.

Major resources and materials to be used in the course:

1. Online resources
   1. cisco.netacad.net - the online curriculum is located here along with testing, both chapter and final exams.
   2. Book(s)
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         <u>Optional books</u>
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Required activities and sample optional activities to be used:

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