

Course descriptions are updated and reviewed with all new text adoptions.

Secondary Course Description

COVER PAGE

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|--|--|------|-----------|---|-----------------------|---|-----------------------|
| <p>1. Course Title: Internet Engineering 1</p> <hr/> <p>2. Transcript Title / Abbreviation:</p> <hr/> <p>3. Transcript Course Code / Number (Office Use Only): 187200</p> <hr/> <p>4. School: Davis Senior High School</p> <hr/> <p>5. District: Davis Joint Unified School District</p> <hr/> <p>6. Length of Course: 1 year</p> <hr/> <p>7. School / District Web Site: http://www.djUSD.net</p> <hr/> <p>8. School Contact Name: Kevin Anderson Title/Position: Teacher Phone: 757-5400 Ext.: 183 Fax: E-mail: kanderson@djUSD.net</p> | <p>9. Subject Area: History/Social Science English Mathematics Science Language other than English Visual & Performing Arts x DJUSD Graduation Elective College Prep Elective (will seek UC/CSU approval)</p> <hr/> <p>10. Grade Level(s): 10 - 12</p> <hr/> <p>11. Seeking "Honors" Distinction? Yes x No</p> <hr/> <p>12. Credit Value: 0.5 (half year or semester equivalent) x 1.0 (one year equivalent) 2.0 (two year equivalent) Other: _____</p> | | | | | | |
| <p>13. Was this course previously approved by UC? Yes x No If so, in what year? _____ Under what course title? _____</p> | | | | | | | |
| <p>14. Pre-Requisites: Completion of Algebra I, Algebra II recommended Co-Requisites:</p> | | | | | | | |
| <p>15. Preliminary Approval - Secondary Site Principal Signature (Must be signed before proceeding to Step 16): _____</p> | | | | | | | |
| <p>16. Date Course Proposal with Preliminary Approval (Step 15) sent to Associate Superintendent, Educational Services: _____</p> | | | | | | | |
| <p>17. Review & Approval:</p> <table style="width: 100%; border: none;"> <tr> <td style="width: 50%; border: none;">Date</td> <td style="width: 50%; border: none;">Signature</td> </tr> <tr> <td style="border: none;">_____ Site Curriculum and Instruction Leadership Team</td> <td style="border: none;">Signature/Title _____</td> </tr> <tr> <td style="border: none;">_____ Secondary Department Articulation/Collaboration</td> <td style="border: none;">Signature/Title _____</td> </tr> </table> <p>Secondary Principal Signatures: _____ Date: _____</p> | | Date | Signature | _____ Site Curriculum and Instruction Leadership Team | Signature/Title _____ | _____ Secondary Department Articulation/Collaboration | Signature/Title _____ |
| Date | Signature | | | | | | |
| _____ Site Curriculum and Instruction Leadership Team | Signature/Title _____ | | | | | | |
| _____ Secondary Department Articulation/Collaboration | Signature/Title _____ | | | | | | |

BACKGROUND INFORMATION

Brief Course Description:

This course, sponsored by the Cisco Corporation, will prepare students to enter the world of computer network engineering design and construction through study of theory and hands-on practice. Students will receive a certificate from CISCO upon completion of each semester. When 2 years are completed, students may take the industry examination to become a certified network technician.

Context for Course:

List the State/District Standards addressed in this course.

This course is designed to be part of a Career Technical Education program of study, a Linked Learning Pathway, a Regional Occupational Program and/or a California Partnership Academy. As the Information and Communication Technologies industry sector thrives and expands, the need for qualified technology professionals continues to grow. This course hopes to address this labor market need by preparing students for the rigors of college level academic work and majors relating to Internet engineering or computer science.

History of Course Development:

The Internetworking I/II course has been offered in the past. There is now the opportunity to apply for UC A-G credit for students. Internet Engineering 1 would replace Internetworking I.

COURSE GOALS AND/OR MAJOR STUDENT OUTCOMES

Description of how this course supports district goal to increase student awareness and appreciation of diversity:

Career Technical Education serves and meets the needs all students. This course is articulated to Sacramento City college and helps students who do not want to follow a traditional college path develop skills necessary to succeed in the workforce. This course promotes logic and troubleshooting skills necessary for all students to succeed. This course also helps students follow a college career path through Computer Science and Management Information Systems.

COURSE OBJECTIVES

- Setting up computer systems
- Planning and installing small networks
- Troubleshooting networks and Internet connectivity
- Sharing resources among multiple computers
- Configure common Internet applications
- Configure basic IP services
- Troubleshoot problems using an organized, layered procedure
- Describe the OSI model and the process of Encapsulation

Use of binary and hexadecimal math

COURSE OUTLINE

About the Cisco Networking Academy Program:

Sponsored by Cisco Systems, Inc., the Cisco Networking Academy Program is a comprehensive learning program which provides students with the Internet technology skills essential in a global economy. The Networking Academy program delivers Web based content, online assessment, student performance tracking, hands-on labs, instructor training and support, and preparation for industry-standard certifications.

The Networking Academy Curriculum:

The Networking Academy curriculum is available through High Schools, Community Colleges, and 4-year colleges worldwide. It is also available at some technical colleges as well. The program gives students at educational institutions and in-transition workers in demand Internet technology skills for designing, building and maintaining networks.

Combining instructor-led, online education with hands-on laboratory exercises, the curriculum enables students to apply what they learn in class while working on actual networks. Cisco has created partnerships with schools and colleges, businesses, nonprofit organizations, international organizations, unions, and government agencies, and works to provide real-world skills for all students in the certification tracks.

Many students use the training to get a higher-paying entry-level job, or improve their job skills for promotion opportunities.

Curriculum:

Cisco Certified Entry Network Technician (CCENT), a 2-year (4 semester) curriculum, is the first step in a Cisco career certification path. Courses must be taken in sequence; students who cannot complete all 4 semesters at Davis High School are encouraged to continue their certification through many local public and private colleges. The program emphasizes the use of decision-making and problem-solving techniques in the application of science, mathematics, communication and social studies concepts to solve networking problems.

This course is designed to prepare students for further study and careers in Computer Science, Computer Engineering, and/or Information Communication Technology (ICT, formerly IT). Students will learn about theoretical networking models, including the OSI Theoretical Models and the TCP/IP Theoretical Model. While learning about the theoretical and applied design and architecture of different information systems, students also gain understanding of network protocols, distributed algorithms, challenges and solutions related to information systems design and management. Students analyze the ways in which technology is changing both society and economics through case studies of individuals and firms who have reshaped the global economy. Students acquire the ability to evaluate information system performance at various levels of granularity, with emphasis on network systems level design and performance. They then analyze this real-world data against the theoretical models. Students learn to use binary,

hexadecimal, and octal mathematical models to evaluate system throughput, flow, utilization, etc. In addition, students learn the principles involved in the formal design and management of computer information systems network and the use of tools such as probability theory, queuing theory, distributed systems, operating systems design, information systems measurement protocols, and heuristic design procedures. As part of their 21st Century College and Career Portfolio, students will show that they have the soft skills necessary to succeed in College and Careers.

TEXTS AND SUPPLEMENTAL INSTRUCTIONAL MATERIALS

Cisco Academy Website has all of the course materials for students.

Previously Adopted? **Yes** **No (If no, provide information directly below)**

| Cost per book | Total Cost | Budget Source |
|---------------|------------|---------------|
|---------------|------------|---------------|

Other:

DIFFERENTIATED INSTRUCTIONAL METHODS AND/OR STRATEGIES

Strategies for Supporting School Goal of Improving Writing Skills:

Students will write reports regarding network implementation, troubleshooting, and form summaries within these reports.

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ASSESSMENT METHODS AND/OR TOOLS

Exams, and Assignments.
Key assessments are the hands-on Skills Exam, and comprehensive Final

ASSESSMENT CRITERIA

Grading will be based on completion of hands-on laboratory exercises, online (electronic) examinations, and completion of other assignments. The grading scale for the courses is based on a weighted average of these levels, with particular weight being given to the hands-on laboratory exercises.

HONORS COURSES ONLY

Indicate how this honors course is different from the standard course.

N/A