



Los Angeles Community College District

COURSE OUTLINE

(Replaces PNCR and Course Outline)

Section I: BASIC COURSE INFORMATION

OUTLINE STATUS: New Course, Degree Applicable, 2006-2007 (Addition of Existing Course)

*

- 1. COLLEGE: Southwest
2. SUBJECT (DISCIPLINE) NAME: Computer Science - Information Technology
3. COURSE NUMBER: 682
4. COURSE TITLE: Computer Networking II
5. UNITS: 4
6. CATALOG COURSE DESCRIPTION -- Provide a description of the course, including an overview of the topics covered:

This course covers the operational characteristics of routers, categorization of networks, IOS software and routing protocols. Students are given the opportunity to troubleshoot routers and examine strategies for studying and preparing for certification tests.

- 7. CLASS SCHEDULE COURSE DESCRIPTION -- Provide a brief description of the course, including an overview of the topics covered:

This course covers the operational characteristics of routers, categorization of networks, IOS software and routing protocols.

- 8. INITIAL COLLEGE COURSE APPROVAL DATE, Curriculum Committee: 3/20/07
COLLEGE OUTLINE APPROVAL DATE: 3/20/07
COLLEGE APPROVAL DATE, Academic Senate: 4/10/07

- 9. UPDATES, IF PREVIOUSLY EXISTING: (check all applicable boxes): N/A, New Course

- Content Last Update:
Objectives Last Update:
College Specific Course Attributes/Data Elements Last Update:
Districtwide Course Attributes/Data Elements Last Update:
Other (describe) Last Update:

[Empty box for additional updates]

1 Underlined course attributes are the same for the course throughout the LACCD; all other course attributes are college specific.

10. CLASS HOURS:

| | "Standard Hours" per Week (based on 18 weeks) | Total Hours per Term (hrs per week x 18) | Units |
|------------------------------|---|--|-------|
| Lecture: | 3 | 54 | 3 |
| Lab/activity (w/ homework): | | | |
| Lab/activity (w/o homework): | 3 | 54 | 1 |
| Total: | 6 | 108 | 4 |

Note: The Carnegie Rule and Title 5, section 55002 sets forth the following minimum standards: 1 unit = 1 hour lecture per week, 2 hours homework per week; **OR** 2 hours per week of lab with homework; **OR** 3 hours of lab per week without homework. The hours per week are based on a standard 18-week calendar. Lecture also includes discussion and/or demonstration hours, laboratory includes activity and/or studio hours.

11. PREREQUISITES, COREQUISITES, ADVISORIES ON RECOMMENDED PREPARATION, and LIMITATION ON ENROLLMENT

Note: The LACCD's *Policy on Prerequisites, Corequisites and Advisories* requires that the curriculum committee take a separate action verifying that a course's prerequisite, corequisite or advisory is an "appropriate and rational measure of a student's readiness to enter the course or program" and that the prerequisite, corequisite or advisory meets the level of scrutiny delineated in the policy.

. Prerequisites: **Yes** (If Yes, complete information below)

| Subject | Number | Course Title | Units | Validation Approval Date (official use only) |
|---------|--------|-----------------------|-------|--|
| CO SCI | 681 | Computer Networking I | 4 | 3/20/07 |

. Corequisite: **None** (If Yes, complete information below)

| Subject | Number | Course Title | Units | Validation Approval Date (official use only) |
|---------|--------|--------------|-------|--|
| | | | | |

. Advisories: **None** (If Yes, complete information below)

| Subject | Number | Course Title | Units | Validation Approval Date (official use only) |
|---------|--------|--------------|-------|--|
| | | | | |

12. REPETITIONS -- Number of times course may be repeated for credit (three maximum): **0, None** (see: Section V, #9)

13. OTHER LIMITATIONS ON ENROLLMENT (see Title 5, Section 58106 and Board Rule 6803 for policy on allowable limitations. Other appropriate statutory or regulatory requirements may also apply):

Enrollment is limited by the number of workstations available; as of March 2007, 30 workstations are available.

| COURSE CONTENT AND SCOPE -- Laboratory : If applicable, outline the topics included in the laboratory portion of the course (<i>outline reflects course description, all topics covered in class</i>). | Hours per Topic | COURSE OBJECTIVES - Laboratory (If applicable): Upon successful completion of this course, the student will be able to... (Use action verbs – see Bloom’s Taxonomy below for “action verbs requiring cognitive outcomes.”) ² |
|--|---|---|
| 1. Diagram WANs and Routers a. Network topology models b. Router-to-router diagrams 2. Configuring Routers a. Terminal commands b. Memory commands c. Router commands 3. Managing IOS Software a. Command history commands b. Command-line user interface c. Router user interface modes 4. Programming Routers & Router Protocols a. Examining router status b. Running & startup configurations 5. Distance Vector Routing Protocols a. Writing DV algorithms b. Solving routing loops 6. Examine TCP/IP Suite Error & Control Messages a. Examining Layer 1 errors b. Examining Layer 2 errors c. Examining Layer 3 errors 7. Troubleshoot Routers a. Troubleshooting General Models a. Troubleshooting Routines 8. Program Intermediate TCP/IP Commands a. Protocol Graphs b. Suites of Protocols 9. Access Control Lists a. Layer 3 Logical Addressing b. Limiting network traffic c. InBound/OutBound Traffic | <p>6.0</p> <p>6.0</p> <p>6.0</p> <p>6.0</p> <p>6.0</p> <p>6.0</p> <p>6.0</p> <p>6.0</p> <p>6.0</p> <p>6.0</p> <p>6.0</p> <p>6.0</p> <p>6.0</p> <p>6.0</p> | <p>4. Use the CDP, a Cisco proprietary protocol that runs at the data link layer of the OSI model.</p> <p>2. Use all other Cisco commands such as ICMP, IOS and TTL.</p> <p>3. Interface a programming terminal to the routers console connection.</p> <p>4. Run network diagnostic using a typical internet workstation setup.</p> <p>SLOs: As a result of this learning experience, the student can:</p> <p>1. Log into a router in both user and privileged modes.</p> |
| Total Lab hours* | 54 | |

*Total lecture and laboratory hours (which include the final examination) must equal totals on page 1.

Bloom’s Taxonomy

| SIMPLE SKILLS <<----->> COMPLEX SKILLS | | | | | |
|--|----------------------|--------------------|-------------------|------------------|-------------------|
| | | | Critical Thinking | | |
| <u>Knowledge</u> | <u>Comprehension</u> | <u>Application</u> | <u>Analysis</u> | <u>Synthesis</u> | <u>Evaluation</u> |
| define | translate | interpret | distinguish | compose | judge |
| repeat | restate | apply | analyze | plan | appraise |
| record | discuss | employ | differentiate | propose | evaluate |
| list | describe | use | appraise | design | rate |
| | | | | formulate | compare |
| | | | | arrange | |

² In general “activity” courses or portions of courses are classified “laboratory.”

| | | | | | |
|-----------|-----------|-------------|------------|-----------|----------|
| recall | recognize | demonstrate | calculate | assemble | value |
| name | explain | dramatize | experiment | collect | revise |
| relate | express | practice | test | construct | score |
| underline | identify | illustrate | compare | create | set up |
| | locate | operate | contrast | organize | prepare |
| | report | schedule | criticize | | choose |
| | review | shop | diagram | | assess |
| | tell | sketch | inspect | | estimate |
| | | | debate | | measure |
| | | | inventory | | |
| | | | question | | |
| | | | relate | | |
| | | | solve | | |
| | | | examine | | |
| | | | categorize | | |

2. REQUIRED TEXTS:

Provide a representative list of textbooks and other required reading; include author, title and date of publication:

Routers & Routing Basics, CCNA 2 Companion Guide by Odem & McDonald, CISCO Press, 2006.

3. SUPPLEMENTARY READINGS:

Reading assignments may include, but are not limited to the following:

No supplementary reading required; optional reading of journals and trade magazines

4. WRITING ASSIGNMENTS:

Title 5, section 55002 requires grades to be “based on demonstrated proficiency in subject matter and the ability to demonstrate that proficiency, at least in part, by means of essays or, in courses where the curriculum committee deems them to be appropriate, by problem solving exercises or skills demonstrations by students.” Writing assignments in this course may include, but are not limited to the following:

Create a portfolio out of the key concepts and lab exercises of all the modules; short-answer responses on final exam; problem-solving exercises to show proficiency in programming routers.

5. REPRESENTATIVE OUTSIDE ASSIGNMENTS:

Out of class assignments may include, but are not limited to the following:

Homework assignments involving development of skills, i.e., sketches of equipment configurations, equations to develop, and charts to create of a router table, etc.

6. REPRESENTATIVE ASSIGNMENTS THAT DEMONSTRATE CRITICAL THINKING:

Title 5, section 55002(a) requires that a degree-applicable course have a level of rigor that includes “critical thinking and the understanding and application of concepts determined by the curriculum committee to be at college level”. Critical thinking may include, but is not limited to analysis, synthesis, and evaluation. Provide examples of assignments that demonstrate critical thinking.

*Router tables will be developed to study network traffic patterns
Students will analyze error messages and find a solution*

7. METHODS OF EVALUATION:

Title 5, section 55002 requires grades to be “based on demonstrated proficiency in subject matter and the ability to demonstrate that proficiency, at least in part, by means of essays, or, in courses where the curriculum committee deems them to be appropriate, by problem solving exercises or skills demonstrations by students.” Methods of evaluation may include, but are not limited to the following (please note that evaluation should measure the outcomes detailed “Course Objectives” at the beginning of Section II):

Weekly quizzes, monthly tests, assignments related to concepts and labwork, midterm and final exams

8. METHODS OF INSTRUCTION:

Methods of instruction may include, but are not limited to the following:

- Lecture
- Discussion
- Laboratory
- Activity
- Field Experience
- Independent Study
- Other (explain)

9. SUPPLIES:

List the supplies the student must provide.

USB memory sticks (512 MB or more), Binder and folders, notebook, etc

10. COMPUTER COMPETENCY:

If applicable, explain how computer competency is included in the course.

Basic computer literacy is provided by the prerequisite courses.

11. INFORMATION COMPETENCY:

Information competency is the ability to find, evaluate use, and communicate information in all its various formats. It combines aspects of library literacy, research methods and technological literacy. Information competency includes consideration of the ethical and legal implications and requires the application of both critical thinking and communications skills. If applicable, explain how information competency is included in the course.

- | | |
|---|---|
| <i>A. Acquires/Evaluates information</i> | <i>B. Organizes/Maintains information</i> |
| <i>C. Interprets/communicates information</i> | |

12. DIVERSITY:

If applicable, explain how diversity (e.g., cultural, gender, etc.) is included in the course.

A variety of teaching methodologies are used in order to serve diverse needs; students of all cultures, genders, etc. will be served.

13. SCANS COMPETENCIES (required for all courses with vocational TOP Codes; recommended for all courses):

SCANS (**S**ecretary's **C**ommission on **N**ecessary **S**kills) are skills the Department of Labor identified, in consultation with business and industry leaders, which reflect the skills necessary for success in the workplace. Check the appropriate boxes to indicate the areas where students will develop the following skills (please note that all SCANS competencies do not apply to all courses):

RESOURCES

- Managing Time:** Selecting relevant goal-related activities, ranking them in order of importance, allocating time to activities, and understanding, preparing and following schedules.
- Managing Money:** Using or preparing budgets, including making cost and revenue forecasts; keeping detailed records to track budget performance, and making appropriate adjustments.
- Managing Material and Facility Resources:** Acquiring, storing, allocating, and distributing materials, supplies, parts, equipment, space or final products in order to make the best use of them.

INTERPERSONAL

- Participating as Member of a Team:** Working cooperatively with others and contributing to group's efforts with ideas, suggestions and effort.
- Teaching Others New Skills:** Helping others learn needed knowledge and skills.
- Exercising Leadership:** Communicating thoughts, feelings, and ideas to justify a position, encouraging, persuading, convincing or otherwise motivating an individual or group, including responsibly challenging existing procedures, policies or authority.
- Negotiating:** Working toward agreement that may involve exchanging specific resources or resolving divergent interests.
- Working with Cultural Diversity:** Working well with men and women and with people from a variety of ethnic, social, or educational backgrounds.

INFORMATION

- Acquiring and Evaluating Information:** Identifying a need for data, obtaining the data from existing sources or creating them, and evaluating their relevance and accuracy.
- Organizing and Maintaining Information:** Organizing, processing and maintaining written or computerized records and other forms of information in a systematic fashion.
- Interpreting and Communicating Information:** Selecting and analyzing information and communicating the results of others, using oral, written, graphic, pictorial, or multimedia methods.
- Using Computers to Process Information:** Employing computers to acquire, organize, analyze and communicate information.

SYSTEMS

- Understanding Systems:** Knowing how social, organizational and technological systems work and operating effectively with them.
- Monitoring and Correcting Performance:** Distinguishing trends, predicting impacts of actions on system operations, diagnosing deviations in the functioning of a system/organization, and taking necessary steps to correct performance.

- Improving or Designs Systems:** Making suggestions to modify existing systems in order to improve the quality of products or services and developing new or alternative systems.

TECHNOLOGY

- Selecting Technology:** Judging which sets of procedures, tools or machines, including computers and their programs, will produce the desired results.
- Applying Technology to Tasks:** Understanding overall intent and proper procedures for setting up and operating machines, including computers and their reprogramming systems.
- Maintaining and Troubleshooting Equipment:** Preventing, identifying, or solving problems with equipment, including computers and other technologies.

Section III: RELATIONSHIP TO COLLEGE PROGRAMS

1. **THIS COURSE WILL BE AN APPROVED REQUIREMENT FOR AN APPROVED ASSOCIATE DEGREE OR CERTIFICATE PROGRAM:** **Yes**

- a. If yes, the course will be a **"restricted" elective** portion of the "approved program" listed on the State Chancellor's Inventory of Approved Programs (approved programs can be found on the State Chancellor's Office website at <http://misweb.cccco.edu/esed/webproginv/prod/invmenu.htm>)

Recommended elective for Computer Science AA degree (Program ID: 02866)

NOTE: In order for a course to be approved as a requirement for an associate degree or certificate program, the program must be listed on the State Chancellor's Office *Inventory of Approved Programs* AND the course must be listed in the college catalog as either a requirement or an elective for the program. If course is not part of an approved program at the college adopting the course, it will be considered to be a "stand-alone" course, and is subject to the State Chancellor's approval criteria. The college must complete and submit the Chancellor's Office "APPLICATION FOR APPROVAL OF CREDIT" form. Certain courses are granted "blanket approval" by the State Chancellor's Office and do not require separate approval. See the Chancellor's Office *Program and Course Approval Handbook* for details. LACCD Skills **Certificates are not State approved programs** and are not listed on the Chancellor's Office *Inventory of Approved Programs*.

2. **GENERAL EDUCATION REQUIREMENTS FOR THE ASSOCIATE DEGREE STATUS:**

- a. Area requested: **None** Approval date:

If applicable, provide an explanation of how the course meets the General Education parameters for one of the five general education areas – *Natural Sciences, Social and Behavioral Sciences, Humanities, Language and Rationality, Health and Physical Education* -- contained in Board Rule 6201.14 -General Education Requirements. http://marlin.laccd.edu/district/BoardRules_AdmsRegs/boardrules.htm

- a. 2nd Area requested: **None** Approval date:

If applicable, provide an explanation of how the course meets General Education parameters for an additional general education area – *Natural Sciences, Social and Behavioral Sciences, Humanities, Language and Rationality, Health and Physical Education* -- contained in Board Rule 6201.14 - General Education Requirements. http://marlin.laccd.edu/district/BoardRules_AdmsRegs/boardrules.htm

Section V: SUPPLEMENTAL COURSE INFORMATION

1. **DEPARTMENT/DIVISION NAME:** Business (Computer Science)
2. **DEPARTMENT/DIVISION CODE:** 03
3. **SUBJECT CODE** -- 3 characters, assigned by District Office: **213** (existing subject codes are available on the LACCD web site at <http://www.laccd.edu/curriculum/directory-programs-courses/index.htm>)
4. **SUBJECT ABBREVIATION** -- 7 characters, assigned by District Office: **CO SCI**
5. **SPC CODE** -- 3 characters, assigned by District Office:
6. **ABBREVIATION FOR TRANSCRIPTS** -- 20 characters, assigned by District Office: **CO SCI 682**
7. **DEGREE CREDIT:** Indicate whether the course meet the "standards for approval" for degree credit course set forth in Title 5, section 55002(a)(2), which requires the course to have a degree of intensity, difficulty, and vocabulary that the curriculum committee has determined to be at the college level :
This courses is **Degree Applicable**

8. **CREDIT/NO CREDIT GRADING:** **No**

9. **REPETITIONS** -- Number of times course may be repeated for credit (three maximum): **0**

How does the repetition of this course meet Title 5, section 58161 requirements? A course may be repeatable when, "course content differs each time it is offered, and that the student who repeats it is gaining an expanded educational experience for one of the following reasons: (A) Skills or proficiencies are enhanced by supervised repetition and practice within class periods; or (B) Active participatory experience in individual study or group assignments is the basic means by which learning objectives are obtained."

None

10. **PRIOR TO TRANSFERABLE LEVEL** – This course attribute applies to **English, writing, ESL, reading** and **mathematics** courses ONLY. If applicable, indicate how many levels below the transferable level this course should be placed: **Not applicable**
11. **CREDIT BASIC SKILLS** -- Title 5, section 55502(d) defines basic skills as "courses in reading, writing, computation, and English as a Second Language, which are designated as non-degree credit courses pursuant to Title 5, section 55002(b)." **No** If Yes, course must be non-degree applicable.
12. **CROSS REFERENCE** -- Is this course listed as equivalent in content to existing College/District courses in another discipline? **No**

If Yes, list courses (documentation of cross-discipline agreement must be provided):

13. **COURSE SPECIFICALLY DESIGNED FOR STUDENTS WITH DISABILITIES** -- Title 5, section 56029 allows a course to be repeatable when continuing success of the students with disabilities is dependent on additional repetitions of a specific class. Is this course designated as an "approved special class" for students with disabilities? **No**

If yes, provide an explanation of how this course meets the requirements of Title 5, section 56029.

14. COOPERATIVE EDUCATION STATUS -- Title 5, section 55252 allows for two types of Cooperative Education: 1) General Work Experience Education -- i.e., supervised employment, which is intended to assist students in acquiring desirable work habits, attitudes and career awareness, which need not be related to the students' educational goals; or 2) Occupational Work Experience Education -- i.e., supervised employment, extending classroom based occupational learning at an on-the-job learning station, which is related to the students' educational or occupational goal. Is this course part of the college's approved cooperative work experience education program? **No**

15. COURSE CLASSIFICATION: **Occupational**

Note: A course's Classification, TOP Code and SAM code must be aligned – e.g., Courses with an "Occupational" Course Classification must have an "Occupational" TOP Code **and** a SAM Code of A, B, C, or D; courses that do not have an "Occupational" Course Classification cannot have an Occupational TOP Code **and** must have an "E" SAM Code. Courses coded as "basic skills" in #11 should be coded "Adult and Secondary Basic Skills."

16. TOP CODE – (6 digits XXXX.XX) 0701.00

Course content should match discipline description in Taxonomy of Programs found at www.cccco.edu/cccco/esed/curric/curriculum.htm.

17. SAM CODE (Student Accountability Model): **C - Clearly Occupational**

SAM Codes (see CCC Chancellor's Office *Student Accountability Model Operations Manual*, 1984) should be assigned as follows:

Priority "A" – Apprenticeship: Courses designed for an indentured apprentice must have the approval of the State of California, Department of Industrial Relations Department, Division of Apprenticeship Standards.

Priority "B" – Advanced Occupational: Courses taken by students in the advanced stages of their occupational programs. Courses should be offered in one specific occupational area only. Priority letter "B" should be assigned sparingly; in most cases, no more than two courses in any one program should be labeled "B." "B"-level courses must have Priority "C" prerequisites in the same program area.

Priority "C" – Clearly Occupational: Courses generally taken by students in the middle stages of their programs should have a difficulty level sufficient to detract "drop-ins." Courses may be offered in several occupational programs within a broad area. The "C" priority, however, should also be used for courses within a specific program area when the criteria for "B" classification are not met. A "C"-level course should provide the student with entry-level job skills.

Priority "D" – Possibly Occupational: "D" courses are those taken by students in the beginning stages of their occupational programs. The "D" priority can also be used for service (or survey) courses for other occupational programs.

Priority « E » – Non-occupational.

SECTION VI: APPROVAL STATUS

1. APPROVAL STATUS:

- | | | |
|---|-------------------------------------|--|
| a. <input type="checkbox"/> New Course | . Board Approval Date: | . Effective Semester: |
| b. <input checked="" type="checkbox"/> Addition of Existing District Course | . College Approval Date: 4/10/07 | . Effective Semester: Fall 07 |
| c. <input type="checkbox"/> Course Change* | . College Approval Date: | . Effective Semester: |
| d. <input type="checkbox"/> Outline Update | . College Approval Date: | |

* Changes to a course require the completion of a "Course Change Request" form and approval by the college's Curriculum Committee. In some cases districtwide approval is also required; see, Administrative Regulation E-65, section 3(c) for details.

SECTION VII: APPROVAL INFORMATION FOR NEW OR ADDED COURSES

(complete in consultation with Department Chair and the appropriate Academic Administrator)

1. **ORIGINATOR:** James E. Hicks

2. **DEPARTMENT:** Business (Computer Science - Information Technology)

3. **IF THIS IS A NEW COURSE, INDICATE HOW THE COLLEGE PLANS TO MEET THE EXPENSE OF THIS COURSE:**

By additional funds. Describe:

Equipment: CISCO has tentatively agreed to provide initial setup costs and LASC to provide additional funds as needed through Block Grants to establish needed equipment.

By deleting courses from the college catalog and course database. List specific courses to be deleted:

N/A

By deleting sections of existing courses. List courses and number of sections to be deleted:

First year: Second year: Third year:

By rotating sections of existing courses. List courses and number of sections to be rotated, as well as the semesters in which they will be offered:

Teaching: Sections will be rotated to accommodate the new series of classes within the CO SCI program (CO SCI 630, 639 and 660)

4. **IMPACT --** Will this course directly impact other course offerings and/or associate degree or certificate programs on campus?

Yes (If yes, briefly explain how)

Possible marginal negative impact on enrollment in Electronics discipline; possible positive impact of attracting new students into various college programs

5. METHOD OF SUPPORT -- Indicate how the college plans to support the proposed course:

Additional staff -- List additional staff needed:

Additional duties will be placed on existing instructional assistant/lab technicians needed to monitor/maintain lab.

Classroom -- List classroom type needed:

Classroom equipped with CISCO certified equipment along with existing computers

Equipment -- List new equipment needed and indicate funding source for any new equipment:

An estimated 30-station computer network & approved Cisco networking equipment, all to be provided through the CISCO Lab Grant and LASC Block Grant. (Additional equipment will allow for additional enrollment.)

Supplies- List supplies and indicate dollar value:

\$15,000 for supplies specified by Cisco Approximately \$3,000 per year to supply wires, cables, plugs, tools, etc.

Library/Learning Resources- The course initiator shall consult with the College Librarian and review the college library, book, periodical, and electronic resource collections relevant to this course. List additional titles and resources to be considered for purchase as funding permits:

The department will supply textbooks, reference materials and online resources to the Library.

6. APPROPRIATENESS TO MISSION—Describe how the objectives of the proposed course are consistent with the mission of the community colleges as established by the Legislature in the Education Code. The course should also be congruent with the mission statement of the local college and district.

CCNA program falls in line with the college mission of providing vocational (job) skills needed for underrepresented population of Southcentral community.

7. NEED—Demonstrate the need for the course that meets the stated objectives, at this time, and in the region.

- A. To provide job skills needed in the market place
- B. “Network systems and Communication Analysts, +57%); jobs that will add the largest percentage of positions through 2012” (Bureau of Labor Statistics, 2005)
- C. Advisory committee recommendation of 3/24/06 strongly urged starting CCNA program at LASC

CONTENT REVIEW FOR PREREQUISITE VALIDATION

Target Course & Number, Title: CO SCI 682

(Course to which pre/corequisite/advisory applies)

Check
Applicable
Box

Prerequisite: CO SCI 681: Computer Networking I:

Corequisite:

Advisory:

A. **Target Course Entry Skills:** CO SCI 682: Computer Networking II

For prerequisites/corequisites, list specific skills and/or knowledge necessary for students to succeed in the target class. For advisories, list skills/knowledge which will enrich or deepen the student's knowledge obtained from the course but without which the student may still succeed in the course. Attach additional sheet if necessary. NUMBER EACH SKILL.)

1. Explain bandwidth & throughput.
2. Describe the OSI & TCP/IP Preference models of networking.
3. Define LAN, WAN, MAN, SAN, VPN, and equipment configuration used in each.
4. Ability store/retrieve data to/from secondary storage devices types.
5. Understand key features of memory and file management.
6. Functions of Windows operating systems and their role in networking/internet.
7. Sketch cabling layout for LANs and WANs

B. **Exit Skills Provided By Prerequisite/Corequisite/Advisory Course or Assessment:**
Course & Number, Title: CO SCI 681

(List specific skills and/or knowledge that are the outcome of the prerequisite/corequisite/advisory course or assessment. For courses already in the curriculum, these should be present in the course objectives in the course outline. Attach additional sheet if necessary. NUMBER EACH SKILL.)

LECTURE:

1. Describe the physical connections needed for a computer to connect to the Internet
2. Review Networking Terminology, Ethernet, significance of bandwidth, and networking models such as OSI
3. Define voltage, resistance, impedance, and current in electronics circuits and their effect on different types of cable media
4. Name TCP/IP protocols as they relate to network devices like routers and switches
5. Explain the functions, advantages and disadvantages of repeaters, hubs, bridges, routers, switches, and wireless network components
6. Describe and differentiate between serial, ISDN, DSL, and cable modem WAN connections
7. Define collisions, broadcast, collision domains and broadcast domains, and segmentation of a network
8. Explain the difference between public and private addressing, use of static and dynamic addressing for a device; configure the computer for a reserved IP address; assign dynamic addresses using (Routing) RARP and DHCP.

CONTENT REVIEW SKILLS MATRIX FOR PREREQUISITE VALIDATION*

***Validation requires at least one match of each entry skill with any exit skill(s).**

COURSE & NUMBER: : CO SCI 682: Computer Networking II:

Course Title:

Entering Skills of Target Course

COURSE & NUMBER: CO SCI 681
Course Title: Computer Networking I
Exit Skills of Prerequisite Course

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|---|---|---|---|---|---|---|---|---|---|
| 1 | | X | | | | | | | |
| 2 | X | X | X | | | | X | | |
| 3 | | | | | | | | | |
| 4 | | X | | | | | | | |
| 5 | | | | | | | | | |
| 6 | | | X | X | | | | | |
| 7 | | | | | | X | | | |
| 8 | | | | | X | | | | |
| 9 | | | | | | | | | |

Was validation achieved? YES or NO

Comments:

(Include justification for assessments, health and safety, or non-course prerequisites)

PARTICIPANTS IN CONTENT REVIEW:

(Signatories should include instructors for both exit and entering skills courses.)

Name: Mr James Hicks Title: _____ Initial: _____ Date: _____

Name: Dr Majid Haghoo Title: _____ Initial: _____ Date: _____

Name: Dr Neil Mantena Title: _____ Initial: _____ Date: _____

CERTIFIED BY:

James E. Hicks _____

Initiator Date

Saakian/Magee _____

Department Chairperson Date

Linda Larson Singer _____

Curriculum Chairperson Date

LOS ANGELES COMMUNITY COLLEGE DISTRICT COURSE STANDARDS AND CRITERIA

Subject: **CO SCI** Number: **682** Course Title: **Computer Networking II**

Using the Official Course Outline, please determine whether or not the above listed credit course meets the following standards and criteria required in Title V, Part VI of the California Administrative Code, and which has been designated as appropriate to the Associate Degree. Place a (X) in the appropriate box.

| <u>CRITERIA AND STANDARDS</u> Section 55002 | <u>RATING CRITERION</u> | |
|--|-------------------------|---------|
| | MET | NOT MET |
| Is recommended by the responsible college officials, and the academic senate or other appropriate faculty body as meeting the requirements of this subsection and has been approved by the local district governing board as a course meeting the needs of the students for admission. | ✓ | |
| Is taught by a credentialed instructor in the discipline. | ✓ | |
| Is offered as described <u>in an outline in official college files</u> . That the outline shall specify the unit value, scope, objectives, content in terms of a specific body of knowledge, appropriate reading and writing assignments, outside of class assignments, instructional methodology and methods of evaluation for determining whether the stated objectives have been met by students. | ✓ | |
| Is taught in accordance with a set of instructional objectives common to all students. | ✓ | |
| Provides for measurement of students performance in terms of the stated course objectives and culminates in a formal recorded grade based upon uniform standards in accordance with Section 55578 of Title 5, which is permanently recorded as an evaluation of student performance; bases grades on demonstrated proficiency in subject matter determined by multiple measurement for evaluation; and has examinations, including essays and/or, where appropriate, uses appropriate symbol systems and/or skills demonstrations by students. | ✓ | |
| Grants units of credit based upon a specified relationship between the number of lecture and/or laboratory hours or performance criteria specified in the course outline; and requires a minimum of three hours of work per week including class time for each unit of credit, prorated for short-term, lab and activity courses. | ✓ | |
| Treats subject matter with a scope and intensity which requires students to study independently outside of class time. | ✓ | |
| Requires, when appropriate, entrance skills and consequent prerequisites for the course before students are enrolled | ✓ | |
| Requires the ability to think critically and to understand and apply concepts in order to participate in the course. | ✓ | |
| Requires learning skills and a vocabulary appropriate for a college course. | ✓ | |
| Requires the use of college level educational materials. | ✓ | |

Title5Assurances

CERTIFICATION AND RECOMMENDATION

This course meets Title 5 requirements for Associate Degree applicable college credit towards an Associate of Arts Degree.

This course meets Title 5 requirements but does not satisfy the requirements for an Associate Degree applicable course.

We certify that the information and answers above properly represent this course.

Neil Mantena

Originator

05/23/2007

Date

Carolyn Magee & Lernik Saakian

Department/Cluster Chairperson

05/31/2007

Date

Linda Larson Singer

Articulation Officer

05/24/2007

Date

Linda Brady

Librarian

06/01/2007

Date

Leige Henderson for E. Robertson

Dean (if applicable)

06/01/2007

Date

Linda Larson-Singer

Curriculum Committee Chairperson

05/27/2007

Date

Reggie Morris

Academic Senate President

05/31/2007

Date

Leige Henderson

Vice President, Academic Affairs

06/01/2007

Date

Jack E. Daniels, III

College President

06/01/2007

Date

DATA INPUT PAGES
(Fills Automatically from Other Pages)

COLLEGE: LA Southwest

APPROVAL STATUS:

New Course
 Addition of Existing
 District Course

Board Approval Date:
 College Approval Date: 4/10/07

Effective Semester:
 Effective Semester: Fall 2007

DEPARTMENT/DIVISION NAME: BUSINESS (COMPUTER SCIENCE, INFORMATION TECHNOLOGY)

DEPARTMENT/DIVISON CODE:

SUBJECT (DISCIPLINE) NAME): COMPUTER SCIENCE

SUBJECT CODE -- 3 characters, assigned by District Office:

SUBJECT ABBREVIATION -- 7 characters, assigned by District Office: **CO SCI**

COURSE TITLE: Computer Networking II

COURSE NUMBER: 682

UNITS: 4

CLASS HOURS:

| | Hours per week (based on 18 weeks) | Total Hours per term (hrs per week x 18) | Units |
|------------------------------|------------------------------------|--|-------|
| Lecture: | 3 | 54 | 3 |
| Lab/activity (w/ homework): | | | |
| Lab/activity (w/o homework): | 3 | 54 | 1 |
| Total: | 6 | 108 | 4 |

DEGREE CREDIT: Indicate whether the course meet the "standards for approval" for degree credit course set forth in Title 5, section 55002(a)(2), which requires the course to have a degree of intensity, difficulty, and vocabulary that the curriculum committee has determined to be at the college level :

This courses is
Degree Applicable

THIS COURSE WILL BE AN APPROVED REQUIREMENT FOR AN APPROVED ASSOCIATE DEGREE OR CERTIFICATE PROGRAM: YES

If yes, the course will be a "restricted" elective portion of the "approved program" listed on the State Chancellor's Inventory of Approved Programs (approved programs can be found on the State Chancellor's Office website at

GENERAL EDUCATION FOR TRANSFER:

Area requested: None Approval date:

GENERAL EDUCATION REQUIREMENTS FOR THE ASSOCIATE DEGREE STATUS:

Area requested: None Approval date:

2nd Area requested: None Approval date:

TRANSFER STATUS:

Transferable to the University of California UC approval date:

Transferable to the California State University: **YES** College approval date:

GENERAL EDUCATION FOR TRANSFER:

IGETC

Area requested:

Date requested:

IGETC approval date:

CSU CERTIFICATION

Date requested:

CSU approval date:

ABBREVIATION FOR TRANSCRIPTS -- 20 characters, assigned by District Office: **CO SCI 682**

COURSE CLASSIFICATION: Occupational

TOP CODE -- (6 digits xxxx.xx) **0701.00**

SAM CODE (Student Accountability Model): **C, Clearly Occupational**

PREREQUISITES, COREQUISITES, ADVISORIES ON RECOMMENDED PREPARATION, and LIMITATION ON ENROLLMENT

Prerequisites: Yes (If Yes, complete information below)

CO SCI 681, Computer Networking I

Corequisite: None (If Yes, complete information below)

CREDIT/NO CREDIT GRADING: No

REPETITIONS -- Number of times course may be repeated for credit (three maximum): **None**

CROSS REFERENCE -- Is this course listed as equivalent in content to existing College/District courses in another discipline? **No**

CREDIT BASIC SKILLS -- Title 5, section 55502(d) defines basic skills as "courses in reading, writing, computation, and English as a Second Language, which are designated as non-degree credit courses pursuant to Title 5, section 55002(b)." **No**
If Yes, course must be non-degree applicable

COURSE SPECIFICALLY DESIGNED FOR STUDENTS WITH DISABILITIES -- Title 5, section 56029 allows a course to be repeatable when continuing success of the students with disabilities is dependent on additional repetitions of a specific class. Is this course designated as an "approved special class" for students with disabilities? **NoNo**

APPROVAL STATUS:

New Course

Board Approval Date:

Effective Semester:

Addition of Existing District Course

College Approval Date: **4/10/07**

COOPERATIVE EDUCATION STATUS -- Title 5, section 55252 allows for two types of Cooperative Education: 1) General Work Experience Education -- i.e., supervised employment, which is intended to assist students in acquiring desirable work habits, attitudes and career awareness, which need not be related to the students' educational goals; or 2) Occupational Work Experience Education -- i.e., supervised employment, extending classroom based occupational learning at an on-the-job learning station, which is related to the students' educational or occupational goal. Is this course part of the college's approved cooperative work experience education program? **No**

CATALOG COURSE DESCRIPTION -- Provide a description of the course, including an overview of the topics covered:

This is the second in a sequence of four courses that prepares the student for the CCNA test and certification exam. This course covers the operational characteristics of routers; categorization of networks; IOS software, routing protocols, and TCP/IP suite error and control messages. Students are given the opportunity to troubleshoot routers and examine strategies for studying and preparing for certification tests such as the CCNA.

CLASS SCHEDULE COURSE DESCRIPTION -- Provide a brief description of the course, including an overview of the topics covered:

This course covers the operational characteristics of routers, categorization of networks, IOS software and routing protocols.

SPC CODE -- 3 characters, assigned by District Office: