

Skyline College

*Telecommunications, Wireless
and Network Information Technology (TCOM)*

Program Review Executive Summary



Short Summary of Findings

The program remains faithful to and dedicated to its mission and its goals. Currently, the department is in transition, as we review the telecommunications and wireless course offerings; those offerings have been placed on hold, as have the Linux/UNIX classes. The Networking and remaining course offerings enjoy a steady enrollment and strong rates of retention and success. The program has substantially increased its LOAD. The program has also identified the individual course SLOs; Assessment instruments have been created, and data gathering/analysis has commenced. Budgetary constraints have limited the upgrading of labs and the introduction of new class offerings. The future of the program is bright, and the U.S. Dept. of Commerce, Bureau of Labor statistics for computer and networking related employment is projected to “grow faster than average for all occupations.” (Occupational Outlook Handbook, 2010-2011 Edition, U.S. Dept. Labor)

Three Strengths of the Program

- Represents a networking program which is continually reviewed and updated to meet industry standards and practices
- Combines hands-on application of skills with theoretical knowledge
- Offers classes taught by faculty who are working professionals in their respective fields

Three Suggestions for Improvement

- Upgrade of lab equipment and facilities
- Update the program Web Site to reflect program’s strengths and success of its graduates
- Create a system to process student feedback suggesting additional course offerings

Full-Time Faculty Signatures

Norman del Prado

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Submitted on: Highlight this text & type in date

SKYLINE COLLEGE
PROGRAM REVIEW SELF STUDY
TELECOMMUNICATIONS, WIRELESS AND NETWORK INFORMATION
TECHNOLOGY (TCOM)
April 2011

PART A: Mission Effectiveness

Overview

1. State the goals/ focus of this program and how the program contributes to the mission and priorities of the College and District.

The program's goals are to provide inexperienced students with entry-level skills necessary for employment in the Telecommunications and Networking fields and to provide working professionals in those fields with advanced training for job retention or advancement. Those goals are reflected in the form of two A.S. Degrees and related Certificates and three Career Certificates, all based on professional curriculum drawn from industry practices and standards.

The focus of the program is a combination of hands-on application of skills, formal education in theory and application, and critical thinking and problem solving.

In keeping with the mission and goals of the California Community Colleges, the program contributes to occupational training and workforce development.

The program contributes to the mission of Skyline College by:

1. Providing "student-centered education leading to transfer, career advancement, basic skills development and personal enrichment," as all classes are transferable to CSU and classes are designed to prepare students for or advance students within the workplace
2. "Preparing students to be ... critical thinkers, proficient users of technology, effective communicators, socially responsible lifelong learners," as the program uses technology to teach technology, requires analytical thinking as a core component of every course, requires written and oral presentation as part of course participation, and bases classes on technologies which are continually evolving, requiring students/graduates to keep abreast of new developments
3. Advancing "community and industry partnerships, and workforce and economic development," as part of the program goals
4. Promoting academic excellence by:
 - a. Providing students course credit applicable for "transfer to a baccalaureate institution,"
 - b. Participating in "workforce development through vocational programs and certificates, A.S. Degrees, and lifelong learning"
 - c. Providing "relevant, recent and evolving curriculum (including) emerging areas of study (in technology)."

The program contributes to the mission of the District by:

1. Fostering teamwork and individual effort, "encouraging students to develop their general understanding of human effort and achievement,"
2. Providing courses which "allow students to transfer to baccalaureate institutions,"
3. Providing "occupational education and training programs directed toward career development, in cooperation with business, industry, labor and public service agencies,"

4. Celebrating "the community's rich cultural diversity" in student enrollment, staff, and a climate that supports student success.
2. ***Discuss how this program coordinates, impacts, and/or interacts with other programs in the College.***
 1. The program coordinates cross-disciplinary offerings within the Science Math Technology and Business Divisions in network and computer science instruction. Instruction is offered under Business, Computer Science and Telecommunications course numbers with the TCOM department providing the instruction. This has been a very successful approach.
 2. Some program students receive financial aid while enrolled in their course of study.
 3. The program has an active role in Cooperative Education at Skyline College.
 4. The program works with Skyline counselors in Academic Planning and Career Planning to provide information about the program and its students and graduates; the program has supplied counselors with a FAQs page and a computer-based presentation which includes three short video presentations of graduates' experiences while participating in the program.
 5. The program is linked to occupational programs of local high schools through the Tech Prep Program

3. ***Explain how this program meets the needs of our diverse community.***

The program provides an open entry forum for all students who have the abilities and interest in developing employment skills for the Telecommunications, Wireless and Networking industries. Should language or other such barriers exist, the telecommunications department works with the appropriate college departments to address these areas, so that successful instruction can continue.

4. ***If the program has completed a previous self-study, evaluate the progress made toward previous goals.***

During the review of 2005, the following four items were listed as "future review and program modification":

1. The Telecommunications and Networking department is presently planning for a fall start Program that will not offer all of its courses each semester. This transition is necessary to adjust to the changes in student enrollment and employment trends as the industry recovers from its economic downturn (Dot-com Bubble Burst) and adjusts to new technologies.

Result: implemented.

2. The Program continues to adjust to student needs, adding courses in emerging technologies and presently has a number of TCOM 665 classes being taught. Some of these courses will be incorporated into the Telecommunications and Networking curriculum, such as Voice over Internet Protocol, UNIX and Linux Operating Systems, CCNA exam preparation and others.

Result: VOIP, UNIX/Linux and CCNA Exam Prep added to program offerings; as of this time, those classes have been placed on hold, pending review.

3. The program intends to work on the development of advanced concentration skill sets in Network Security, Disaster Recovery, and Wireless Systems Administration. The program would like to investigate the use of WEB enabled instruction to enhance its ability to serve working professionals.

Result: Network Security and Wireless Admin classes added to program; Web-enabled instruction is problematic as the program emphasizes hands-on application of skills and theory; Disaster Recovery has been added to networking curriculum within individual existing courses.

4. The Department intends to continue to work with its industry partners and advisory council to maintain high quality instruction that will serve the needs of its students.

Result: implemented; additionally, faculty are working professionals in their respective fields of technology.

PART B: Student Learning Programs and Services

Overview

1. If the program utilizes advisory boards and/or professional organizations, describe their roles.

The Telecommunications Program was originally developed with the aid of an industry consortium and has maintained an Advisory Board since its inception in 1983. In 2005, the program name was changed to Telecommunications, Wireless and Network Information Technology to reflect the growth and evolution of the program. The present Advisory Board consists of selected members from various employment and educational areas in telecommunications and networking. The Board meets on a formal basis once or twice a year and performs most of its work by select committee.

The major contributions of the Advisory Board are:

1. Review the program on a regular basis and to provide industry insight into employment trends.
2. Recommend additions and changes to the curriculum.
3. Provide a sounding board for the recommendation and review of projected changes and adjustments to the program.
4. Make suggestions related to the effectiveness of the program in preparing students for employment.
5. Assist the program in acquiring equipment loans and donations.
6. Provide assistance in the recruiting of qualified faculty.
7. Assist the program in providing students with employment and internship opportunities.

Curriculum

1. Describe how the courses offered in the program meet the needs of the discipline(s) and the students. (This may be answered through descriptive narrative evaluation or quantitative research).

The program has observed that a majority of Telecommunications and Networking students come to the program at Skyline College for one of three reasons:

1. They are seeking entry level education to obtain employment
2. They are presently part of the employed workforce and need or desire additional skills and knowledge
3. They are pursuing a degree in networking or a related field.

The Telecommunications, Wireless and Network Information Technology Program provides students with a complete basic core of instruction and electives that fulfill the requirement of entry level employment, as defined and specified by industry and verified by our advisory council. Upon completion of the programs core and elective requirements, students are eligible to apply for a Certificate in Telecommunications and Wireless Technology or a Certificate in Network Engineering. If students have completed the general education requirements of the college they may also apply for an A.S. in these same areas.

The elective courses have been developed to provide a program that can adapt to the changes in technology and provide students with options in choosing instruction that are in keeping with their area of employment interest. We have found that most students will complete all elective courses, even after they have received their certificate.

Students who are seeking skill and knowledge upgrades can receive advanced placement in the program and can select from both the core and elective courses, providing they can meet the prerequisite requirements.

Students can receive Career Certificates in selected employment areas as they progress through their course of study toward a degree or certificate. These certificates have been designed to verify that students have reached a minimum skill level for employment in several areas of the Telecommunications and Networking fields.

The program also provides opportunities for students to prepare for professional certifications by offering basic and advanced instruction and exam preparation for: A+, CCNA, and Check Point System Administrator.

The focus of the program is a combination of hands-on application of skills, formal education in theory and application, and critical thinking and problem solving. During interviews with graduates of the program, the combination of hands-on application of skills combined with theoretical and analytical study is singled out as the major component of their success.

2. *State how the program has remained current in the discipline(s).*

Program review is an ongoing process for vocational programs in high-tech fields. The program continually updates, modifies and adds to its curriculum. As new technology develops in the telecommunications and network fields, elective courses are added to the curriculum offerings.

The content modifications and new course offerings are based on recommendations from the program Advisory Board and the faculty, who are working professionals in the fields they teach. Additionally, advanced students are now encouraged to submit topics which they believe would supplement and enhance the program's course offerings.

The last major change to the program occurred in August 2005, when the A.S. Degree in Network Engineering was approved by the state. Changes to existing classes occur as technology becomes available (and department budget allows); examples are: adding Windows 7 to the PC Configuration class; including new switching-routing technology in the Network Switching class; adding newer routing technology to the Introductory and Advanced Routing classes; and, updating the Check Point software (and machine hardware) for the Network Security classes.

3. *If the student population has changed, state how the program is addressing these changes.*

No change in the student population has been noted or documented within data.

4. *All courses in this program should be reviewed for currency and modified every six years. If this has not occurred, please list the courses and explain.*

Exceptions are courses which have been placed on hold: TCOM 415, TCOM 420, TCOM 440, TCOM 445, plus the sequence of Linux courses, TCOM 312, 313, 314, 315, 316, and one course which has been eliminated, TCOM 405.

5. *If external accreditation or certification is required, please state the certifying agency and status of the program.*

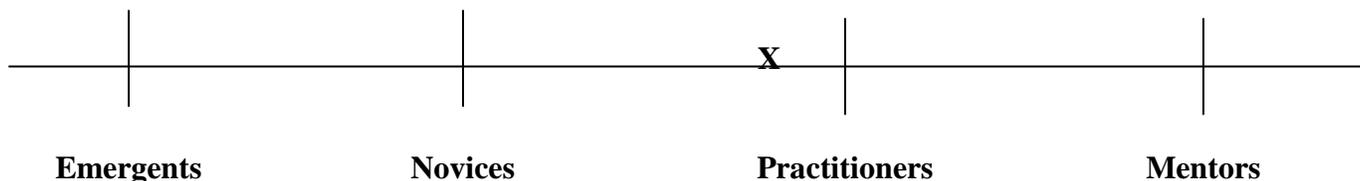
No accreditation or certificate required.

Student Learning Outcomes & Assessment

1. *Where on the continuum do you believe your department is on the SLOAC Initiative?*

Emergents	Novices	Practitioners	Mentors
<ul style="list-style-type: none"> • Learning and discovering • Gathering information • Attending workshops 	<ul style="list-style-type: none"> • Beginning a dialogue • Drafting SLOs • Drafting assessment plans • Taking inventory of assessments • Creating instruments for assessment 	<ul style="list-style-type: none"> • Engaging in widespread dialogue • Implementing assessment plans • Refining SLOs • Reviewing outcome data and discussing implications 	<ul style="list-style-type: none"> • Facilitating discussions and generating new dialogue • Conducting workshops • Lending assistance

Mark an X on the continuum and briefly comment.



The class, TCOM 482, Introduction to Routers, was selected for initial SLO & Assessment; initial data from fall 2010 is being reviewed and assessment tools are being revised. SLOs have been created for all active program courses and assessments are being developed.

2. *Highlight any major findings and resulting course or program modifications.*

None as yet.

3. *What additional resources are needed to implement the plan?*

None at the present.

PART C: Resources

Faculty and Staff

- 1. List major development activities completed by faculty and staff in this program in the last six years and state what development is needed or proposed by faculty in this program.*

The program presently employs one full time and five adjunct faculty members, all working professionals in their respective fields. The program benefits from the continuing education and on-the-job-training received by the faculty members from their employers within the IT industry.

- 2. Describe the orientation process for new faculty and staff (include student workers such as tutors and aides).*

When new faculty members are hired they are provided with the opportunity to participate in the Skyline orientations process, and an experienced faculty member is assigned to act as a mentor.

Graduates and advanced students who serve as tutors and lab assistants are selected by an experienced faculty member who provides training, supervision and evaluation. Advanced students are offered participation in Skyline's Cooperative Education program to earn credit for their volunteer services.

- 3. If recruitment of new and/or diverse faculty is needed, suggest recruitment techniques.*

Traditionally, the program has recruited from industry (through its Advisory Board) and from among the program graduates who are working professionals. This approach has served the program and its students well. No change in technique is planned. Currently, adjunct faculty may be sought to revive the UNIX/Linux course offerings. When new technology is introduced into the program, new adjunct faculty proficient in that specific technology may be hired.

Facilities, Equipment, Materials and Maintenance

- 1. Discuss the effectiveness of the facilities, equipment, equipment maintenance, and materials for the program to meet its goals and focus. Include if they impact success and if they are accessible to all students.*

Building 1 – Room 1227 (the old dressing room for the theater): This location is in service a minimum of four days a week for a range of courses of three hours each. The location contains two lab facilities containing the routers, network switches, servers, computer systems and fiber optic equipment which support many of the program's core classes. Much of the equipment in this facility remains outdated and requires replacement, although some equipment has been replaced and new equipment added within the last two years. Maintenance of the equipment has been performed solely by the advanced students in the program who volunteer their time. While it cannot be said that the resources have negatively impacted the goals and focus of the program, it is true that the equipment limits the ability of the program to offer newer technology to its students, either within an existing course or via a new course offering. The facility is not accessible to all students.

Building 2 – Room 2120: This classroom is in the Center for Advanced Learning. The facility is home to the Basic Networking LAN and (in part) the Network Systems Admin classes and the Computer Configuration and Repair class. The equipment is mostly current at this time but will require upgrade in the next few years. It is accessibility compliant.

Building 2 – Room 2108: This is one of two classrooms (2-2108 and 2-2111) created for the program as part of the building 7 retrofit; the classroom is new and well-equipped. It is accessibility compliant.

Building 2 – Room 2111: This is one of two classrooms (2-2108 and 2-2111) created for the program as part of the building 7 retrofit; the classroom is new and well-equipped. It is accessibility compliant.

2. *List projected needs.*

- New facility or facilities to replace 1-1227
- Additional replacements for Cisco Routers and Switches for Networking Labs
- Replacement of servers and computers for Network Security and Advanced Networking and Troubleshooting classes
- VoIP (Voice-over-Internet-Protocol) equipment for new class offering
- Troubleshooting and imaging software for PC Configuration & Repair class
- Microsoft Server 2008 Academic software licenses for Network Administration class
- Replacement of Wireless Network equipment
- Cisco ASA (security) appliances for new class offering
- VMware software and servers for new class offering
- Additional hardware & software to meet evolving industry standards and instructional needs

3. *Describe the use of technology in the program and discuss if technology is current and comparable to other college and business or industry.*

The hallmark of the program is its combination of hands-on application of skills and theoretical study; the program uses technology to teach technology. At any point in time, the technology available to the program's students is as current as budget constraints allow. The program at Skyline is uniquely positioned within the state's community college system, as its hands-on technology instruction distinguishes it from most, if not all other colleges. Business and industry tend to adopt a specific technology before the program offers instruction in it; to be useful to students in its curriculum, the program follows industry adoption of specific technologies.

4. *If appropriate, describe the support the program receives from industry. If the support is not adequate, what is necessary to improve that support?*

Support from the IT industry is an important element in the success of the program. Industry representatives sit on the program's Advisory Board, and the representatives' input is critical to the program's mission. In past years, monetary and equipment donations have helped the program to achieve and expand its goals. In the current economic climate, monetary donations are unavailable. Recent donations (and offers) of equipment have been of little use, as the items are too out-dated to be incorporated into the curriculum.

It should be noted that much of the recently acquired, second-hand equipment currently in use by the program has come from the SMCCD ITS Department; equipment no longer suitable for administrative or student use at Skyline was redirected to the program.

Budget Request

1. *What resources (staff, facilities, equipment and/or supplies) will be needed in the next six years?*

The success of the Telecommunications and Network Information Technology Program will always be tied to the ability to provide adequate facilities and equipment to support the upgrading of existing courses and the creation of new program offerings. Presently, the identified future needs include:

- New facility or facilities to replace the two lab rooms in 1-1227; the CALT is considered an ideal location
- Additional replacements for Cisco Routers and Switches for Networking Labs
- Replacement of servers and computers for Network Security and Advanced Networking and Troubleshooting classes
- VoIP (Voice-over-Internet-Protocol) equipment for new class offering
- Troubleshooting and imaging software for PC Configuration & Repair class
- Microsoft Server 2008 Academic software licenses for Network Administration class
- Replacement of Wireless Network equipment
- Cisco ASA (security) appliances for new class offering
- VMware software and servers for new class offering
- Additional hardware & software to meet evolving industry standards and instructional needs

2. *If appropriate, discuss methods the program could share resources with other programs in the College and District.*

The program is currently sharing resources with CAOT and COMP SCI via cross-listing classes for which TCOM provides the faculty, curriculum and facilities.

PART D: Leadership and Governance

1. *What leadership roles do the faculty and staff of your program hold in the college?*

All faculty teaching TCOM classes are adjunct, with the exception of Norman del Prado, who is the sole full-time instructor and is a member of the Peer Review Committee. He also composes the Program Review and maintains the program's relationship with the IT industry.

2. *How do the faculty and staff in your program participate in the governance processes of the college/district?*

Norman del Prado is a member of the TAC Committee and participates in Division Evaluation Committees, as well as representing the division on the Shared Governance Committee. Additionally, through Norman del Prado, the program has offered its full cooperation to Vice Chancellor Jing Luan and student Alex King in their request to video tape portions of the labs and classes as part of their promotion of SMCCD.

3. *How do the faculty and staff in your program exercise initiative/leadership in improving practices and services related to the program?*

New initiatives are usually undertaken through discussion with other faculty, the Program Advisory Board and the division dean. Options are evaluated and a cost/benefit analysis is performed. Most curriculum is brought through experimentally with the oversight of industry.

PART E: Action Plan

1. Describe the program's plan for addressing areas of improvement.

The priorities for the program's improvement and its future are:

- Updating the program's Web Site to reflect its success and teaching approach, as well as its successful graduates
- Initiating contact with potential students who may be unaware of the program's unique approach to the teaching of IT theory and skills, including continued dialogues with college counselors
- Expanding contact with leading Bay Area IT companies with the aim of enhancing the program's industry internship opportunities for its students
- Continued upgrading of its lab equipment to keep pace with evolving industry standards and practices
- Creation of new course offerings, including equipment purchase, to keep abreast of mainstream technology.

Skyline College Program Review Worksheet for Enrollment, Performance and WSCH/FTE

Weekly Student Contact Hours – WSCH

Report the 3 previous **Fall** semesters with the most recent on the right.

Year	2007	2008	2009
WSCH	1,177	1,014	1,039

Please comment on program enrollment and expected trends.

The WSCH data from the Fall Terms of 2006 (WSCH = 1,016), 2008 and 2009 are typical of the program; the increase in Fall 2007 is atypical, for reasons unknown.

FTE and WSCH/FTE (LOAD)

Report the previous 3 **Fall** semesters with the most recent on the right

Year	2007	2008	2009
FTE	3.59	2.55	2.22
WSCH/FTE	328	397	468

Please comment on the comparison of this program to College trends.

The College trends are:

Year	2007	2008	2009
FTE	170	177	180
WSCH/FTE	563	590	632

While the College trend is an increase in FTE and LOAD over the past three years, the program trend is a decrease in FTE and increase in LOAD; the program figures reflect two full-time instructors teaching multiple classes per term, as well as a decrease in adjunct faculty. Remaining adjunct faculty generally teach two classes per term.

The program has improved its LOAD since the previous review in 2005, when figures were: 262 (20002), 302 (2003), and 288 (2004).

Retention and Success

Report data on program retention and success rate with the most recent on the right.

Year	2007/08	2008/09	2009/10
Retention	89%	93%	90%
Success	84%	87%	84%

Please comment on the programs success and retention rate. Include factors that affect the rates and how college services are used to provide multiple avenues for student success.

The college rates are:

Year	2007/08	2008/09	2009/10
Retention	81%	83%	84%
Success	65%	67%	68%

Over the past five academic years, the program's retention rate has typically been within the 89% to 90% range; the one-time increase to 93% for the year 2008/09 may reflect a more committed student population motivated by increasingly gloomy economic and job prospects. It can be noted, however, that for the year 2006/07 the retention was atypically 91%, with no apparent explanation.

During the same period, the program's success rate has typically been within the 82% to 84% range; atypically, the rate for 2006/07 and 2008/09 were 88% and 87% respectively.

The program's retention rate remains higher than the college rate by several percentage points. The program's success rate remains significantly higher than that of the college.

Generally, students report reasons for withdrawal to the instructor informally, frequently citing the demands of a full-time non-flexible work schedule or family demands as the reason for withdrawal.

College services pertinent to the program and available to students include: Financial Aid, Educational and Career Planning, Personal Counseling, and Cooperative Education. No formal data on program students who benefit from these services is available; however, anecdotally it appears many students participate in Cooperative Education and some apply/receive Financial Aid.

Program Review Course Outline & Prerequisite Checklist

Discipline: TCOM (Telecom, Wireless & Network Info)

Semester: Spring 2011

ALL COURSE OUTLINES MUST BE REVIEWED AND UPDATED DURING PROGRAM REVIEW!

If there are no changes made to the course outline, use the Program Review date to update the course outline. **Please note that all course outlines must now include the title of a representational text with its publication or revision date and follow the current Title V format.** Refer to *Guidelines for Preparing a Course Outlines* for further assistance.

If it is determined that a course outline needs **substantial modification**, you must complete and submit **Form D – Course Modification** to the Curriculum Committee for approval well **in advance** of your Program Review due date. Please check with your Curriculum Committee representative or go to the Curriculum Committee web site for a list of meeting dates, submission deadlines, instructions and curriculum forms to update (or modify) a course outline. (<http://www.smccd.net/accounts/skycurr/>).

List all the courses in your **discipline** on the attached form. Complete the columns on the form for each course in your discipline using the instructions below:

- Column 1:** What is the course prefix and number?
- Column 2:** What is the course title?
- Column 3:** What date was the course outline last reviewed or updated?
- Column 4:** If this course transfers to either CSU **or** CSU *and* UC, place a check mark in the appropriate column.
- Column 5:** If this course satisfies a GE (General Education) requirement, place a check mark in the column.
- Column 6:** Please list all course prerequisites, corequisites, and/or recommendations.
- Column 7:** Please indicate that the course prerequisites, corequisites, and/or recommendations have been reviewed and validated by faculty by placing a check mark in the column.
- Column 8:** Does the course have SLOs on the official course outline of record?
- Column 9:** Does the course have assessment plans?
- Column 10:** Has the course implemented their assessment plans?
- Column 11:** When did the department review results from implementation of the assessment plan?

Upon submission of your Program Review materials, all course outlines should have the current date in the upper right corner. Please submit a hard copy of **each** outline from your **discipline** listed on the form with your *Program Review* materials. Additionally, all course outline **files** should be e-mailed to the Instruction Office in care of Maria Norris (norris@smccd.net).

Please have the faculty and division dean sign and date the certification on the last page.

COURSE OUTLINE, PREREQUISITE, & STUDENT LEARNING OUTCOMES CHECKLIST

1	2	3	4		5	6	7	8	9	10	11
Prefix & Number	Title	Review Date	Transfer		G.E.	Prerequisites, Corequisites, Recommendations	Validated	SLOs	Assessment Plans	Implementation	Reviewed
			CSU	UC & CSU							
ELEC 110	Electronics Technology	4/1/11	X		X		X	X			
TCOM 100	Telecommunications, Networking and Wireless Technologies	4/1/11	X				X	X			
TCOM 410	Structured Wiring and Cabling for Telecommunications and Networking	4/1/11	X			Pre/Coreq ELEC 110	X	X			
TCOM 451 Also COMP 451	PC Configuration and Repair	4/1/11	X			Pre CAOT 105 & Pre/Coreq ELEC 110	X	X			
TCOM 452	A+ Certification Exam Preparation	4/1/11	X			Pre/Coreq TCOM 451	X	X			
TCOM 460	Fiber Optics Technology	4/1/11	X				X	X			
TCOM 465	Wireless Local Area Networks	4/1/11	X			Prereq TCOM/COMP/CAOT 480	X	X			
TCOM 480 Also COMP 480 CAOT 480	Network Fundamentals (LAN)	4/1/11	X				X	X			
TCOM 481 Also COMP 481	Network Systems Administration	4/1/11	X			Prereq TCOM/COMP/CAOT 480	X	X			
TCOM 482 Also COMP 482	Introduction to Routers	4/1/11	X			Prereq TCOM/COMP//CAOT 480	X	X	X	X	
TCOM 483 Also COMP 483	Network Switches – Concepts & Applications	4/1/11	X			Prereq TCOM/COMP/CAOT 480 Recommend TCOM 482	X	X	X	X	
TCOM 484 Also COMP 484	Advanced Routing Concepts & Applications	4/1/11	X			Prereq TCOM/COMP 482 Recommend TCOM 483	X	X			
TCOM 485 Also COMP 485	Troubleshooting the Internetwork	4/1/11	X			Prereq both TCOM/COMP 483 & TCOM/COMP 484	X	X			
TCOM 486 Also COMP 486	Network Security	4/1/11	X			Prereq TCOM/COMP 482	X	X			

COURSE OUTLINE, PREREQUISITE, & STUDENT LEARNING OUTCOMES CHECKLIST

1	2	3	4		5	6	7	8	9	10	11
Prefix & Number	Title	Review Date	Transfer		G.E.	Prerequisites, Corequisites, Recommendations	Validated	SLOs	Assessment Plans	Implementation	Reviewed
			CSU	UC & CSU							
TCOM 487 Also COM 487	Advanced Network Security	4/1/11	X			Prereq TCOM/COMP 486	X	X			

**Skyline College Program Review
Certification of Course Outline & Prerequisite Review**

Faculty Signatures

Norman del Prado

Highlight this text & type in name

Date Submitted: 30 March 2011

Division Dean: _____

(Additional faculty signature lines may be added to this form as needed.)



MAPPING INSTRUCTIONAL COURSE LEVEL SLOS WITH INSTITUTIONAL SLOS (*FRAMEWORK, 33-34*)

An institutional student learning outcome is a knowledge, skill, ability, and/or attitude that students should attain by the end of their college experience. Here at Skyline, students who complete the GE requirements or receive an AA or AS degree should have mastered the following institutional SLOs: critical thinking, effective communication, citizenship, information and computer technology literacy, and lifelong wellness.

Mapping course-level SLOs with institutional SLOs enables you to identify which courses within your program may be contributing to student achievement of these outcomes, even though your program's approach may differ from others'. Conversely, mapping gives us the means to determine whether our institutional SLOs reflect our priorities as instructors.

Now that Skyline has defined its institutional outcomes, input the names of the key courses in your program (i.e., courses in a prerequisite sequence, heavily enrolled courses, GE courses, etc.) and determine whether achieving those institutional outcomes are: (c) central to a course or (s) supported by the course. An SLO is "central" if it is essential to the course's intent and therefore an instructional priority, and it is "supported" if addressed but not quite at the level of importance as a "central" SLO. Leave the space blank if the institutional SLO does not apply.

This same process can be employed for programs, such as Student Services Programs, that don't have courses. But instead, map your program outcomes to the institutional outcomes.

Skyline College Institutional Outcomes

Key: (C) central to a course, (S) supported by a course, (blank) does not apply

		TCOM 480, 481, 482, 483, 484, 485, 486 Core Networking Courses	Tcom 451, PC Config & Repair	Elec 110	Course D or Program Outcome 4	Course E or Program Outcome 5	Course F or Program Outcome 6	Course G or Program Outcome 7	Course H or Program Outcome 8
Critical Thinking:	Raise vital questions, formulate responses (or solutions) to problems, evaluate the reasonableness of a solution and provide a justification.	C	C	C					
	Analyze and compose arguments; assess the validity or strength or an argument using appropriate deductive and inductive techniques.	C	C	C					
	Think creatively and open mindedly within alternative systems of thought; communicate, either artistically, graphically, symbolically, or verbally, a complete and clear solution to a given problem.	C	C	C					
	Make effective use of evidence in an argument; evaluate the truth or value of the premises using reliable sources of information.	C	C	S					
	Demonstrate understanding of diverse disciplinary perspectives and use appropriate inquiry, including the scientific method.								
	Analyze multiple representations of quantitative information, including graphical, formulaic, numerical, and verbal.	C	C	C					

Effective Communication:	Comprehend, analyze, and respond appropriately to oral, written, and visual information.	C	C	C					
	Effectively express ideas through speaking and writing.	C	C	S					
Citizenship:	Demonstrate scientific literacy concerning a range of global issues;								
	Articulate similarities and contrasts among cultures, demonstrating knowledge of and sensitivity to various cultural values and issues.								
	Develop attitudes central to lifelong learning: openness, flexibility, intellectual curiosity, and a broad perspective that values diversity of thought.	S	S	S					
	Demonstrate appropriate social skills in group settings, listening and being receptive to others' ideas and feelings, effectively contributing ideas, and demonstrating leadership by motivating others.	C	S	S					
	Demonstrate commitment to active citizenship.								
Information and Computer Technology Literacy:	Effectively locate and access information in numerous formats using a variety of appropriate search tools.	C	C	S					
	Use computer technology to organize, manage, integrate, synthesize, create, and communicate information and ideas in order to solve problems and function effectively in an information society.	C	C	S					

Information and Computer Technology Literacy:	Evaluate the relevance, quality, and credibility of a wide variety of information sources using critical thinking and problem solving skills.	C	C	S					
Lifelong Wellness:	Demonstrate an understanding of physical fitness and its role in lifelong wellness.								
	Take personal responsibility for identifying academic and psycho-social needs, determining resources, and accessing appropriate services.								

Program Review - Resource Needs Summary Table

Program: Telecommunications, Wireless and Network Information Technology (TCOM)

	Needs	Notes
Personnel	<ol style="list-style-type: none"> 1. Adjunct faculty to revive Linux/UNIX classes 2. 3. 4. 	<p>If classes can be revived after review, instructor and equipment will be required.</p>
Equipment	<ol style="list-style-type: none"> 1. Additional, new routers for core Networking classes 2. Additional, new switches for core Networking classes 3. New servers & PCs to replace outdated equipment in 1-1227 used for core classes in Networking 4. VoIP equipment for new class offering 5. Additional PCs and Diagnostic software for PC Configuration & Repair class 	<p>Notwithstanding budgetary constraints, the Networking classes require upgrades and replacement of equipment to keep pace with evolving industry standards and maintain the relevancy of the program within the industry---all of which directly attracted and benefits students.</p>
Facilities	<ol style="list-style-type: none"> 1. Two classrooms to replace the two lab facilities currently located in non-accessible 1-1227 ---- CALT is an ideal location as other TCOM classrooms are within it 2. 	<p>All but one of the core networking classes are taught in the two lab facilities located in 1-1227.</p>

Program Review - Resource Needs Summary Table

Program: Telecommunications, Wireless and Network Information Technology (TCOM)

	Needs	Notes
	3. 4.	

Appendix D
Skyline College

Evaluation of the Program Review Process

To improve the Program Review process your help and suggestions are instrumental. We ask that all parties responsible for preparation of this review have input into the evaluation. After completion of the Program Review process, please take a few moments to complete and return this evaluation to the chair of the Curriculum Committee.

Estimate the total number of hours to complete your Program Review: 8 hours approx

1. Was the time frame for completion of Program Review adequate? If not, explain.
Yes, it was adequate

2. Was the instrument clear and understandable? Was it easy to use? If not, explain and offer suggestions for improvement.
Instructions clear and forms easy to use

3. Were the questions relevant? If not, please explain and offer suggestions.
Yes for relevancy; good inclusion of SLO/Assessment

4. Did you find the Program Review process to have value? If not, please explain and offer suggestions.
Self-review is great tool for re-evaluating the program: to create a snapshot of the program mission and the progress in enhancing the value of curriculum for students, college and district

5. Was the data you received from administration complete and presented in a clear format?
Would you like additional data?
Data was sufficient

6. Please offer any comments that could improve and/or streamline Program Review.
None come to mind

**APPENDIX C
SKYLINE COLLEGE**

INSTRUCTIONAL AND STUDENT SERVICES PROGRAM REVIEW

RESPONSE SHEET

**Discipline: Telecommunications, Wireless and Network Information
Technology (TCOM)**

Thank you for your time and effort in preparing this Program Review. Your Executive Summary, with recommendations, has been sent to the Planning/Budget Committee and the Board of Trustees.

College President

Comments:

Signature

Separate boxes for each

College Vice Presidents

Comments:

Signature

Curriculum Committee

Comments:

Signature

Original to remain with self-study
Copies to Planning/Budget Committee & Program Review preparer