Lane Community College
Unit Planning: Instruction & Student Services
Computer Information Technology Department
Unit Plan 05-06

Program Analysis

Key Question: Please review the planning initiatives that were identified in the annual planning cycle. Provide a summary analysis of your work completed last year in relation to your annual planning initiatives by responding to the following questions.

1. **What did your unit accomplish last year in relationship to the annual planning initiatives? Other accomplishments not related to the annual planning initiatives?**

Note: this overview of accomplishments is based largely on current efforts/initiatives from Unit Plan 04-05. Reference is given to the initiative's priority and page number in UP04-05. Where still relevant, the old planning work dating back to 2003 is noted in the section devoted to "Work outside of Unit Plan 04-05."

The Computer Information Technology (CIT) Department continues to be very productive. FTE is significantly up (10%-15%) using the new and strongly student-focused core curriculum. The department is fully engaged in building new curriculum that meets strong community demand. Labs and online infrastructure are operationally strong, well-managed, and effectively student-focused. CIT students, faculty, staff and management all have a high level of constructive participation at the institutional level. Technologically CIT continues to play an innovative leadership instructional role.

The breadth and quality of the work being done is a tribute to the efforts and dedication of the faculty and staff.

a) Funded initiatives [for additional details, see pp. 27-74 of UP04-05]

- Lab Personnel Funding – accomplished (UP04-05 #2, pg 48)

  The department lab supports its professional-technical programs with a technically-focused computer lab staffed with specialized lab aides under faculty direction. These lab aides are specially trained in the CIT Core curriculum as well as in effective support techniques, and are a central component of the department's commitment to student success.

- Revise 227 – partially accomplished (UP04-05 #6, pg 67)

  Carl Perkins funds were allotted for the reorganization of the CIS 227 course sequence focused on troubleshooting (CIS227A – Application Support, CIS227H – Hardware Support, CIS227N – Network Support). This initiative was directly connected to the reorganization of our entire curriculum to establish the common first-year course sequence for all potential majors in the various CIT degree programs. In particular, certain activities from other courses needed to be shifted into CIS227N, and CIS227A and CIS227H needed to be combined into a single course. The work involved in carrying out this initiative is going on in Fall 2005.

- 2nd Year Web – partially accomplished (UP04-05 #8, pg 39)

  One programming initiative from last year was funded – curriculum development for the 2nd year of the programming degree. Jim Bailey developed the first course (CS133G) in a Game Programming sequence of courses and will teach the course to approximately 20 students during Winter 2005. Mari Good re-designed the first course in the server-side web programming sequence (CS195) and developed the new second course in the sequence (CS295). Both web programming courses use a new programming language, PHP.

- Realign CIT Service Courses – partially accomplished (UP04-05 #14, pg 55)

  A number of courses have been affected by both the new CIT core re-alignment and changes elsewhere in the State system. Over the spring & summer the CS160 Orientation to Computer Science course was realigned with both the new core and state-wide standards for transfer.

  Work is progressing on the CIS247 Information Analysis to realign it with new needs in the GIS area as it will no longer be a requirement for the CUS degree because of the new Core. Work is just beginning on a replacement course CIS245 Managing Technology Projects. For consistency across the state, additional work must be done to re-align CIS101 as less than 100-level. The re-evaluation of CIS131 for possible realignment with BA171 or 271 (for transferability) has not yet started.

  Fall meetings were held with the U of O over requested changes to CS120 Concepts of Computing for articulation to their CIS110. The articulation CS160 Orientation to Computer Science to their CIS170 is still in progress. Other courses targeted for articulation work with the U of O are CS133JS, CS275, and some networking and multimedia courses. The timing of this is also dependent on their progress towards a 4-track Computer Science degree and the requirements in those tracks.

  This fall, after much sub-committee summer work, the state-wide meeting of Community College and 4-yr school representatives passed agreement for minimal CS120 outcomes, based on IC3 standards. We were also able to establish the CS160, 161, 162, 260, and 271 courses as meeting the Math/Science requirement for the new 45-credit module as well as the AAOT.

b) Unfunded initiatives **[for additional details, see pp. 27-74 of UP04-05]**

Note: commentary is included where progress has been made with alternate funding sources or unfunded work. For other initiatives reference is given to the initiative's priority and page number in UP04-05.

- State of Art Web – partially accomplished (UP04-05 #4, pg 35)

  One faculty member was awarded release time for one class during Spring 2005. After completing numerous and varied informal interviews with working programmers, programming managers and other programming educators, three general themes emerged: game programming is popular among students and is a marketable job skill in Lane County, large organizations are developing complex sites using object-oriented web development languages like Java and .NET but are not hiring two year graduates, smaller web development shops are interested in Lane students but are more likely to program in scripting languages like PHP.

  As a result, 300 funded curriculum development hours were allocated to game programming and PHP programming courses. A new initiative specific to game programming has been developed this year.

- Security Cert – not accomplished (UP04-05 #10, pg 29)

- Professional Development - Security – partially accomplished (UP04-05 #12, pg 46)

  One faculty member was awarded Carl Perkins funds for an internship focusing on network security at Northwest Community Credit Union. The internship was completed Summer 2005.

- Wireless – not accomplished (UP04-05 #16, pg 31)

- Coordinate CIT Service Courses – partially accomplished (UP04-05 #18, pg 57)

  This initiative asked for a release of one class and was not funded. The purpose was to have time to meet with program areas that require their student to have some computer knowledge. The hope was to evaluate how our courses are serving them and determine how we could better serve their students.

A meeting was held to re-evaluate, and redesign the objectives for the CIS125H class which serves Multimedia Design, Graphic Design, and E-Business programs. Other meetings were held with Social Science faculty to evaluate a computer component for a future GIS program. However, a systematic, larger evaluation of all programmatic areas requiring computing courses still needs to be done. This requires time during the standard school year when faculty in various program areas are available for discourse.

- Lab Equipment Update – partially accomplished (UP04-05 #20, pg 43)

  Added new HP 4250 dtn printer to increase capacity in main computer lab. This printer handles duplexing (prints on both sides in efforts to save paper).

  Added some additional swap drives to handle current student load. During Summer had project to add removable hard drives to all bench / non-production systems in all labs.

  First-term, first-year students are now provided with removable drives for building their own software systems. This hands-on, individualized experience was formerly only available in more advanced courses.

- Learning Community – not accomplished (UP04-05 #21, pg 63)

- Marketing Web Programming – not accomplished (UP04-05 #22, pg 41)

- WAN Theory – not accomplished (UP04-05 #23, pg 33)

- Revise Architecture Classes – not accomplished (UP04-05 #24, pg 61)

- CUS Marketing Survey – partially accomplished (UP04-05 #25, pg 65)

  One of these was a survey of local employers which we feel is necessary to ensure that we are preparing our graduates for the local job market. This would be consistent with the overall assessment of our program. The underlying hypothesis is that a primary source of employment for our graduates will not be the large-scale call centers such as the one that Symantec used to operate here, but rather small or medium-sized enterprises where maybe one or two staff are hired to provide a range of support services from networking to application support to hardware trouble shooting. If this hypothesis is borne out, it means that we may need to modify our CUS curriculum to include more networking and possibly less application training. We also will gain a clearer picture of what knowledge, skills, and abilities our graduates need to have when they leave the program. We drafted a survey instrument, initiated some pre-planning in conjunction with the Business Development Center, and sought funding from IRAP and the President's Office directly, in addition to identifying this survey in our unit plan, but were not successful.

  Because of this a request was made and approved for the CUS program lead to receive a course release in Winter 2006.

- Graduate Tracking – partially accomplished (UP04-05 #26, pg 69)

  An initiative to establish a tracking system for our graduates, to learn more about where they end up being employed and whether they are appropriately prepared. This is more appropriately seen as an initiative for the entire department not just the CUS program, and would be an important form of program assessment for all degree and certificate programs.

  The CIT degree programs in Programming, Network Operation and User Support have graduated well over 500 majors in recent years. In some instances, CIT faculty have maintained contacts with graduates. However, this effort has been largely piecemeal. The feedback about CIT degree programs from recent graduates has been anecdotal, at best. This initiative was designed to implement a tracking system for graduates. The primary purpose of such a system would be to maintain ongoing contact with graduates in order to learn about how their job market

experiences can improve the CIT degree program requirements and course curricula. A secondary benefit would be to learn why some graduates do not find employment in the information technology field. Another benefit would be to enable marketing of professional development opportunities in advanced CIT courses to graduates who have obtained professional employment.

The department recently worked with IRAP to get the contact information for all of last year's graduates, and will be conducting an informal survey on satisfaction and employment outcomes.

- Industry Certification Check – not accomplished (UP04-05 #27, pg 71)

  An initiative to examine the role of industry certifications in the CIT programs as a whole, or in the CUS program specifically. This was also directly related to assessment of the CUS program. The issue is whether our various courses, and/or the program as a whole, should be modified to ensure that students end up being prepared to take such industry certification tests as the A+ hardware test or the MOS applications tests. Our Advisory Committee has indicated that if a prospective employee has such a certification in addition to a 2-year degree, they might consider that applicant more seriously than others.

- CIT Certifications – partially accomplished (UP04-05 #28, pg 73)

  The Business/CIT Division is currently designing a number of certificates to be offered in the 06-07 catalog. This innovative effort is based on a new State process where courses that are a subset of an existing AAS program can be designated as named and transcripted "mini-certificates" in an expedited process.

- Student Organization Membership – not accomplished (UP04-05 #29, pg 59)

- Linux Courses CS140U & CS240U – accomplished (UP04-05 #30, pg 27)

  The creation of CIS140U was completed and is being offered Fall 2005. The modification of CS240U is partially completed and will be finished by Winter 2006 when the modified course will be offered for the first time.

- CS133W – accomplished (UP04-05 #31, pg 37)

  The Department was able to obtain funding for this initiative through reallocation of a closely related UP03-04 initiative which for technical reasons couldn't be completed.

- Modify CIS140 & CIS227N – accomplished (UP04-05 #32, pg 51)

  CIS140 has been completely modified and is being taught Fall 2005. CIS227N will be completed before Spring term when the modified course will be taught for the first time.

- Redesign CS160 – accomplished (UP04-05 #33, pg 53)

  The Department was able to obtain funding for this initiative through reallocation of a closely related UP03-04 initiative which for technical reasons couldn't be completed.

c) Work outside of Unit Plan 04-05

Some highlights of a very active and productive year:

Curricular Improvements

The development of the CIT Core curriculum was a very significant effort, and its implementation and evolution a notable collaborative effort by the CIT faculty. This has led to improved advising and student support, as well as improved scheduling and an increase in FTE. This also necessitated an analysis of each program's needs, and prompted changes to course offerings and sequencing.

Creating a 1st-year cohort enables current efforts to improve online support, and will allow for meaningful data collection and analysis of student pathways.

The department continues to work aggressively to improve the core curriculum. To address a variety of identified needs the core will be modified in the following ways:

- CS195 PHP course added to Spring term.
- CIS125S has been removed, and its material integrated throughout the core.
- CIS105 Orientation to Computing added to Fall term. This 2-credit class will include content from the current CIS100 plus IS and ethics content from current CS160.
- A problem solving with spreadsheets thread will be added to CS160 to replace the content being moved to CIS105.

This past year saw a successful first-time CIT participation in College Now. The program, by design, is of immediate benefit to high school students. In addition, the department is looking to see improved "capture" rate from area high school students attending Lane, and as an added benefit the department saw a significant FTE increase resulting from the immediate popularity of these offerings.

Another positive curricular development was the first-ever participation by CIT in Summer Academies through the two Web Tech sessions. The first session was offered only to high-school girls, while the second session was mixed boys and girls. Both sessions filled, and were very successful.

The department worked with Symantec to provide mock interviews for the networking students in order to further their education in this important job search skill.

Department Improvements

The CIT department underwent a major shift in the lab environment, aligning staffing resources to better support students directly and to improve the classroom and server infrastructure.

Some examples of changes that have been made to create a stronger and coherent student-centered environment in the CIT labs are:

- Increased lab aid staffing by 20% to better support first-year students in their Core courses and second-year programming majors during peak lab use.
- New lab aides, work study students, and tutors completed the Lane Tutor Certification Course to provide strong, consistent, student-focused instructional support.
- Realigned lab infrastructure support under separate fulltime faculty position, leaving lab aides primarily responsible for direct student support.
- Adopted a system to measure the lab's positive effective on students' retention and success in the CIT Core courses, based on division statistics and metrics.
- Established reference library in the lab with CIT course textbooks.
- Completed faculty and student satisfaction surveys to determine areas that need to be strengthened and/or changed.
- Conducted Friday Workshops to answer students' non-course related computer technology questions.
- Researching trouble ticket system to track and respond to lab hardware/software and instructional support issues, and document problems and responses.
- Completed initial design of CIT Lab web page.

In efforts to further fortify our existing IT infrastructure, a number of enhancements have been made to our server infrastructure in order to increase the instructional value, reliability, and responsiveness of our resources to students.

- **VPN Access**
  Allows instructors and administrators the capability of remotely interacting and responding to student needs on instructional servers.
- **Storage**
  Developed and deployed a secure and encrypted network backup strategy and hardware / software solution to backup servers over the network to a self-built network attached storage (NAS) device while utilizing existing hardware.
- **Security**
  Developed a security scanning solution that tests for vulnerabilities and creates reports. Utilized the results of reports to secure / harden systems both in the labs (internal) and in the DMZ (serving data to the outside world).
- **High Availability – RAID for Ghosting / Imaging Servers**
  Added RAID to Ghost server to provide for continued service in the event of drive failure.
- **CITNET**
  Provided a means for students to save their class work in their own storage location throughout the term for Windows related courses.
- **Banner Data Automated Downloads**
  Utilized Banner data in order to automatically create user accounts for students on a variety of instructional servers (Windows and UNIX / Linux).

The department faculty and staff continue to aggressively pursue professional development opportunities, including sabbaticals, internships in the work environment, professional certification workshops and extensive undocumented and unfunded personal study efforts by faculty in every area.

Collaboration and Institutional Participation/Leadership

CIT worked extensively with other departments on curricular issues, most notably with the Business, Multimedia and Advanced Technologies departments. The department was an active participant and leader in summer work to create an institutional initiative process. Students, faculty and staff had an extensive and active role in council and committee work. CIT has provided extensive support and office space for the Business department during their Building 2 remodel.

Service to Students With Disabilities

CIT donated significant recurring funds to help create a support position in Disabilities Services. CIT has always worked closely with Disabilities Services in support of students, and particularly with blind students. The department remains deeply committed to this area, as reflected by its role in helping create this Disabilities Services position.

2. What are the areas that still need attention?

The increased importance and dependency of having a shared first-year curriculum has required a heightened level of communication between faculty in different programs and departments. This needs to be supported with a more generalized and common description of learning outcomes, assessment methods and skill sets.

The growth patterns, complexity and rapid rate of change in computer fields creates ongoing need for attention to:

- flexibly adapting curriculum to create both stability and growth in programs
- ensuring employability in our local job market, especially needs of small to medium-sized employers
- meeting changing demands for teaching methods, including hands-on instruction
- ensuring student retention and success
- professional development opportunities for faculty

3. Considering your responses to questions 1 & 2 and emerging needs and demands, what are your plans for next year? This conclusion should be the foundation on which initiatives are built.

The overall need for CIT is to improve its processes and services to meet market demands in a flexible and responsive manner. This requirement for agility in the marketplace necessitates a broad range of planning efforts simultaneously.

a) New and Expanded Curriculum

There is significant unmet community demand for computer instruction, and the department is planning on significant growth in meeting these needs. The department is creatively pursuing development paths for new curriculum, including creating new mini-certificates and new programs (GIS, Game Programming, Network Security).

Because the CIT curriculum is rapidly evolving, courses also need to be updated frequently (e.g. to ensure adherence to national ACM standards). This is as true of transfer classes as it is for courses that support professional-technical programs.

Network Security – Enhancing security in computer networks is of critical concern for IT departments in Oregon, and world wide. The need to offer more security information to the Lane networking majors is therefore very important.

Wireless Networking – The use of wireless networking has been increasing very rapidly in recent years.

Wide Area Networking and Troubleshooting – The appropriate, secure interconnections between various networks dispersed geographically is of increasing concern in the computer world.

Two new courses to complete the Game Programming Option for the Programming degree must be developed. A sequence of three courses that represent an additional Option for the Programming degree should also be developed. Faculty involved in programming courses must be provided with staff development opportunities to broaden their knowledge and experience in these new areas of programming. Three new related initiatives have been developed and are discussed in detail in the document that follows:

1. Mini-Certificate Curriculum
2. Faculty Professional Development
3. Additional Option for Programming Majors

b) Improved and Expanded Delivery Modes

The department plans to continue efforts to expand College Now and RTEC offerings, and to meet the needs of non-traditional students through significantly improved online offerings and support.

c) Improved Data for Decision Support

The Department plans to improve financial data and decision making by aligning orgs with "units" used in institutional planning processes. The Department also plans to greatly improve data collection and analysis of the learning environment to support everything from curriculum design to student support interventions.

d) Improving Retention and Student Support

Plans for this area range from direct support in the lab environment, to developing a coherent strategy and infrastructure for supporting students online.

e) Improving Marketing

The department plans to increase the effectiveness of its website, to improve data that supports decision-making to target specific populations (e.g. graduates, industry professionals, etc.), and to continue to improve its visibility in traditional media.

Annual Program Plans: How do you propose improving future performance? Each initiative should be linked to the needs identified through the program analysis.

Section I: Planning

1. **Initiative Title:** CIT Open Lab (19/135) Lab Aides Funding **Division Priority: 1**

2. **How is the initiative linked to your Program Outcomes Analysis for last year? What program level outcomes do you expect to achieve?**

   Program Outcomes:

   b) Improved and Expanded Delivery Modes
   d) Improved Retention and Student Support

   The lab aides are integral to the department's professional-technical programs, providing specialized assistance that can't be provided at other computer labs on campus. The lab aides are central to the department's plans to continue to increase enrollment through improved retention and student success, as well as efforts to grow via recruitment and new program development.

3. **Describe the Initiative**

   As part of the implementation of a standard student Technology Fee, the support costs for lab aides in the CIT lab (19/135) was moved to be Technology Fee funded.

   This is a recurring need, so this initiative asks that it be general funded, and if it is not, then this initiative documents the continued use of Student Technology Fee funding that resulted from the original implementation of that fee.

Section II: Linking Planning to Budgeting - If you need Resources:

4. **Describe resources needed**

   Based on 2005-2006 pay rates, the cost of providing lab aides 75 hours per week, 39 weeks per year will be **$49,112** (includes OPE).

5. **List the possible funding sources**

   Tech Fee or General Fund
   - *Can this project be partially funded?* No
   - *If so, what portion could be funded at what minimum cost?*

   If the funding source is Carl Perkins: N/A
   How does the request meet one or two of the Carl Perkins act goals?

6. **Provide ORG & PROG codes:** ORG – 641000, PROG – 112000

7. **For programs that have advisory committees: What plans do you have for working more effectively with your Advisory Committee?**

   The Advisory Committee helps identify key needs from a community and industry perspective that the Department works to meet. These needs include significant hands-on work, providing a strong support context, and improving enrollment trends through retention and improved success rates.

Section I: Planning

1. **Initiative Title:** Computer Survey Course for Core Curriculum **Division Priority: 3**

2. **How is the initiative linked to your Program Outcomes Analysis for last year? What program level outcomes do you expect to achieve?**

   Program Outcomes:

   a) New and Expanded Curriculum
   d) Improving Retention and Student Support
   e) Improved Marketing

   It adds additional learning objectives to the new CIT Core curriculum and furthers the commonality of the Core by fully integrating the Core and the CIT certificate. This course will add a study of computer ethics and information systems to the Core curriculum. Merging the Core with the CIT certificate is expected to improve student retention by providing an intermediate goal for all students. This also provides a valuable opportunity to market our offerings to students.

3. **Describe the initiative**

   This project will develop a new two-credit course for the CIT first year Core. This course will provide an introduction to computer ethics, information systems, and an overview of possible careers.

   It supports the college goals of increased student retention by providing a certificate to all students who complete the first year of study in CIT.

   After reviewing the material that is included in the current Core curriculum and discussing the needs of students with the advisory committee, CIT faculty have agreed that additional material needs to be added to the Core. Developing this two-credit course is the most effective way to add that material. The alternative would be to rewrite several of the other courses in the Core, which would require more resources and would not solve the problem of integrating the Core curriculum with the certificate program.

   It is a very efficient use of college resources. For 100 hours of curriculum development, the college will gain an increase in FTE and student retention.

Section II: Linking Planning to Budgeting - If you need Resources:

4. **Describe the resources needed**
   Please be specific about the actual equipment/resources that you need. In addition, complete the Initiative Spreadsheet for each resource requested.

One hundred (100) hours of curriculum development funds (100 @ $26.44 = $2,644 + $1,063 OPE = **$3,707**) OR one course of release time (taught by 2/6 PT faculty, $3,035 + $1,220 OPE = **$4,255**) would be required to develop the curriculum.

5. **List the possible funding sources**

   Curriculum Development or Release Time

   - *Can this project be partially funded?* No
   - *If so, what portion could be funded at what minimum cost?*

   If the funding source is Carl Perkins: N/A
   How does the request meet one or two of the Carl Perkins act goals?

6. **Provide ORG & PROG codes:** ORG – 641000, PROG – 112000

7. **For programs that have advisory committees: What plans do you have for working more effectively with your Advisory Committee?**

   We have discussed the Core curriculum with our Advisory Committee and they have agreed with us that adding this course would improve the knowledge outcomes of our Core curriculum. We hope to improve on these discussions of both needs and department implementations by developing a common language of explicit learning outcomes.

Section I: Planning

1. **Initiative Title:** Mini-Certificate Curriculum **Division Priority: 5**

2. **How is the initiative linked to your Program Outcomes Analysis for last year? What program level outcomes do you expect to achieve?**

   Program Outcomes:

   a) New and Expanded Curriculum
   d) Improving Retention and Student Support
   e) Improved Marketing

   This initiative both creates new curriculum and a new curricular model for the department. It offers many new possibilities for improving retention and student support, not least by opening career pathways and new career directions. It provides a marketing focus, and provides a clear growth path for working with area professionals and industries.

3. **Describe the initiative**

   The State has recently approved a fast-track mechanism for approving mini-certificates when the certificate is made up of courses that come from an already-approved program. This initiative will fund a creative effort to weave the process of developing these mini-certificates into a multiple-layered solution to professional-technical curriculum challenges.

   - The courses that make up the mini-certificate also work as electives for any of the CIT programs, providing a mechanism to create a more robust program.
   - The courses that make up the mini-certificate work also work to attract professionals from the community needing ongoing professional development. By taking the whole sequence, professionals can gain additional transcripted expertise to serve their career advancement needs.
   - The certificates themselves serve as a marketing focus to attract new populations of students. (And the Dept is already seeing response that supports other evidence of strong demand.)
   - Because the certificates are transcripted they offer added value to students when seeking employment. Students may be tempted to get more than one mini-certificate and extend their educational stay (analogous to the national trend of getting multiple certifications).
   - By providing additional "branch points" the mini-certificates in a sense create entirely new counseling and career pathway opportunities.
   - The mini-certificates provide an exploratory development mechanism that can flexibly lead either to an "option" on an existing degree, or perhaps new degrees.

   Additional certificates developed from existing courses will function in a sense as "minors" for professional-technical students. Students are motivated to take a whole sequence, creating new student cohorts for the programs and department to work with and market to.

The department is targeting two high-demand areas with this effort: Network Security and Gaming. Both areas have been strongly encouraged by our Advisory Committee; both are being developed in partnerships with area businesses; both are highly ranked nationally as areas to target for fast growth in the industry.

Gaming Mini-Certificate

It addresses the desire to increase FTE by attracting additional students. Game design and programming is an area of current high interest and developing a sequence of courses will bring in students who are interested in the area.

Gaming is at the heart of new educational delivery methods that use 3-D rendering as an instructional tool. This technique is already being used extensively and effectively in industry, both for instruction and for role-playing assessment purposes.

This series also has the benefit of adding C++, a popular programming language in the academic (especially engineering) and professional community, to the curriculum at Lane. (E.g. at OSU upper division standing requires the programming skill in C++.)

This project will add two additional courses to the one that is currently under development and will be taught Winter 2006. The two courses will build upon the material presented in the first course and will prepare students for introductory positions in the game development community. Local game development companies are being consulted on the design and content of the new curriculum.

It is a very efficient use of college resources. For 200 hours of curriculum development, the department will gain FTE by adding a new population of students, will better serve existing students in many ways, and will gain improved connections to the local professional community. In addition, by pursuing this initiative the dept believes that it is developing an efficient developmental model for new professional-technical curriculum that serves new students, existing students and professional development needs in the community.

Network Security Mini-Certificate

This project will add two security courses to the already planned Computer Security Fundamentals course to provide a three term sequence of network security courses using the state designated numbers CS284, CS285 and CS286. Material covered in the two new courses will include firewall security and other advanced security topics such as risk management, protection mechanisms, and developing a security program.

Classes could also be taken by any second year CIT student since each degree program has a CS elective sequence available in the second year. The CIT Advisory Committee has emphasized that security is a high priority in supporting a network and recommended that we provide more significant security material to our majors. Since most organizations use network firewalls and require a secure network, the CIT majors pursuing technical support jobs will be more

employable. It is anticipated that at least two sections of each course would be offered serving at least 40 to 50 students.

By increasing the skill set of our majors in an area of critical importance to employers, we are enhancing their job opportunities.

The three courses will be marketed to the IT community in Lane County. This will allow direct contact via e-mail and phone. It is anticipated that these courses will attract members of the IT community wanting to supplement their security knowledge, since there seems to be a shortage of security education offered in Lane County.

It is a very efficient use of college resources. For $3,500 spent on hardware, 200 hours of curriculum development, and two internships, the college would receive an increase in FTE indefinitely. The need for technical people to understand security issues is a clear market "winner" and one that will continue to grow for many years to come.

Section II: Linking Planning to Budgeting - If you need Resources:

4. **Describe the resources needed**

- Two hundred (200) hours of curriculum development funds (200 @ $26.44 = $5,288 + $2,126 OPE = **$7,414**) **OR** two courses of release time (taught by 2/6 PT faculty, $6,070 + $2,440 OPE = **$8,510**) would be required to develop the gaming curriculum.
- Two hundred (200) hours of curriculum development funds (200 @ $26.44 = $5,288 + $2,126 OPE = **$7,414**) **OR** two courses of release time (taught by 2/6 PT faculty, $6,070 + $2,440 OPE = **$8,510**) would be required to develop the network security curriculum.
- Internship focused on firewall security – estimated cost **$2,000**.
- Internship focused on risk management, protection mechanisms, and developing a security program – estimated cost **$2,000**.
- Hardware – fifty (50) removable drives at an estimated cost of **$3,500**. Existing CIT facilities (labs, computers, and network) would be used to teach the course. The removable drives are the only hardware needed.

5. **List the possible funding sources**

Curriculum Development or Release Time

- *Can this project be partially funded?* Yes
- *If so, what portion could be funded at what minimum cost?* If the curriculum development is partially funded, progress would be made on the project. For example, 100 hours of curriculum funds (100 @ $26.44 = $2,644 + $1,063 OPE = **$3,707**) would complete one of the two courses in a sequence.

If the funding source is Carl Perkins:
How does the request meet one or two of the Carl Perkins act goals?

Measurable Goal #1 – Improving Academic and Technical Skills
Through the curriculum created and the innovative curriculum model developed.

Measurable Goal #3 – Nontraditional Training & Employment
Through use of Game technologies as an instructional tool.

Measurable Goal #6 – Post-secondary Connections
The Gaming certificate curriculum has its origins in a high-school game class that articulated with CIT for its programming content. This initiative will build the curriculum that can be offered either as College Now or as RTEC at this same high school and others.

Measurable Goal #7 – Counseling and Career Development
The certificate approach offers new career pathway opportunities, a mechanism for providing something that functions as transcripted extensions of existing degrees, and a new development context for professional development classes.

6. **Provide ORG & PROG codes:** ORG – 641000, PROG – 112000

7. **For programs that have advisory committees: What plans do you have for working more effectively with your Advisory Committee?**

   Eugene has a thriving industry in gaming that has been the topic of Committee conversations in the past. We are pleased to include a representative of this industry on our Advisory Committee.

   Our Advisory Committee members have consistently represented a need for significant new network security curriculum – this initiative is in part a response to the needs articulated by the Committee.

   The network security curriculum is being developed with a local Savings and Loan business's security officer, who is both helping create curriculum and has also volunteered to help team teach network/security topics. This sort of direct connection with area industry is being cultivated with the support of our Advisory Committee.

   We plan to seek input on the most important technical areas needed by students seeking employment in the IT sector. We also plan to solicit their input and assistance in building the database of IT employee contacts.

Section I: Planning

1. **Initiative Title:** Faculty Professional Development **Division Priority: 7**

2. **How is the initiative linked to your Program Outcomes Analysis for last year? What program level outcomes do you expect to achieve?**

   Program Outcomes:

   a) New and Expanded Curriculum
   d) Improving Retention and Student Support

   This initiative will enhance student learning by enabling faculty to include new industry developments into the curriculum. By keeping faculty technical knowledge current, the curriculum will continue to be attractive to prospective students, and this will result in increasing student enrollment and retention rates.

3. **Describe the initiative**

   The CIT department plans to increase, in a major way, the computer security, wireless networking, wide area networking information and the amount of programming tools and technologies provided for our majors. This is consistent with industry trends, and is critical in today's information technology fields. Course changes are considered important in order to maintain technical currency for our students, and the addition of these new courses and mini-certificates requires that many CIT faculty learn and teach about areas of computing in which they have no academic or professional experience.

   It is also important that the faculty involved in incorporating new information into the curriculum have appropriate knowledge of current technologies and knowledge of current IT practices in these areas. For this reason, the professional development classes, conferences and internships listed in Section II.4 are needed.

Section II: Linking Planning to Budgeting - If you need Resources:

4. **Describe the resources needed**

   For the three CIT Programs (Computer User Support; Computer Networking; Computer Programming), we need:

   - Six professional development classes at $3,000 each $18,000
     Topics: Firewall Security
     Other Advance Security topics
     (e.g., risk management, protection mechanisms,
     Developing a security program)

Wireless Networking
Wide Area Networking Theory/Troubleshooting
Web programming
Game programming
Database, GIS or Java Web Programming

- Three computer conferences at $1,500 each $4,500
- Three internships at $2,000 each $6,000

Total Estimated Professional development funds to train faculty **$28,500**

5. **List the possible funding sources**

   Faculty Professional Development and Carl Perkins

   - *Can this project be partially funded?* Yes
   - *If so, what portion could be funded at what minimum cost?* Any combination of the activities, classes, conferences and internships will provide the department's technical programs with critical professional development needed for growth.

   If the funding source is Carl Perkins:
   How does the request meet one or two of the Carl Perkins act goals?

   The knowledge gained by faculty would be directly used in the classroom to enhance student learning in a professional technical degree.

6. **Provide ORG & PROG codes:** ORG – 641000, PROG – 112000

7. **For programs that have advisory committees: What plans do you have for working more effectively with your Advisory Committee?**

   We use our conversations with the Advisory Committee as an important context for validation of many of the decisions that faculty must make, and our efforts in professional development an important part of this conversation.

   We plan to seek input on the most important technical areas needed by students seeking employment in the IT sector.

Section I: Planning

1. **Initiative Title:** Marketing Infrastructure: Job Survey & Graduate Tracking

   Division Priority: 9

2. **How is the initiative linked to your Program Outcomes Analysis for last year? What program level outcomes do you expect to achieve?**

   Program Outcomes:

   a) New and Expanded Curriculum
   b) Improved and Expanded Delivery Modes
   c) Improved Data for Decision Support
   d) Improving Retention and Student Support
   e) Improved Marketing

   We are trying to address the challenge of making sure the CUS curriculum properly prepares student to be competitive in the local job market. This initiative is critical to that effort because it will help us identify what employers need and want in the way of computer user support.

   With this initiative we are also trying to address the challenge of better aligning our curriculum with the needs of students and employers by establishing a tracking system for graduates who go to work locally, or not. The purpose of such a system is to maintain better contact with graduates in order to learn about how their job market experiences can improve degree program requirements and course curriculum. A secondary benefit is to learn why some graduates do not find employment in the user support or other IT field.

   All of this effort underlies the central effort to improve marketability by improving our understanding of need and our ability to promote how our programs satisfy needs. By focusing this effort on the CUS program we get immediate applicability, but this also creates the essential marketing infrastructure that is needed across our curriculum.

3. **Describe the initiative**

   During the 04-05 academic year, the CUS program attempted to update its understanding of the local job market for CUS graduates. A survey was developed to target smaller employers of user support staff. The survey was to use a combination of interviews, questionnaires and focus groups to learn how the CUS degree program can be improved to better meet the needs of small-to-medium size companies that hire one, or a small number of user support staff. The purpose of this initiative is to carry out the survey, contacting many hundreds of local businesses in the database of Lane's Business Development Center to identify changes in the CUS degree program course requirements or the curriculum in specific courses that address the findings of the survey. Changes are to be based on an employer survey. The survey is to be conducted through a combination of face-to-face interviews, a mailing, and email/web page electronic communication.

The CIT degree programs in Programming, Network Operation and User Support have graduated well over 500 majors in recent years. In some instances, the CIT faculty have maintained contacts with graduates. However, this effort has been largely piecemeal. The feedback about CIT degree programs from recent graduates has been anecdotal, at best. This initiative is designed to implement a tracking system for graduates. The system will be based on both manual and automated (database) procedures to maintain contacts with recent graduates.

- *How does this initiative align with the strategic directions of the college?*
  - Fostering the personal, professional, and intellectual growth of learners by providing exemplary and innovative teaching and learning experiences and student support services.
  - Committing to a culture of assessment of programs, services and learning.
  - Positioning Lane as a vital community partner by empowering a learning workforce in a changing economy.
  - Building organizational capacity and systems to support student success and effective operations.
  - Promoting professional growth and provide increased development opportunities for staff both within and outside the College.
- *What will the product, innovation, or change of this initiative be? Please be as specific as possible.* This initiative may result in changes to degree requirements for CUS or changes in the curriculum in specific courses to better meet the need of employers in the local job market. The results of a successful CUS/CIT graduate tracking system include 1) an information resource for making curriculum revisions and 2) possible development of networking opportunities for CUS/CIT majors seeking co-op internships and jobs.
- *What is the need or intended use? How was that need assessed? What is your evidence of the need?* Need is based on the professional judgment of faculty and feedback from students, community and Advisory Committee. We have observed that some of the larger employers of our graduates have left town or changed the nature of their operations, thus needing fewer support staff. We have also observed that smaller employers may have a different set of support needs than these larger ones. We have also observed a decline in our enrollment.
- *Given college resources, is it feasible? Is it an efficient use of college resources?* The Job Market Survey is feasible because substantial groundwork has been laid already: discussions with the Business Development Center about the use of their 1700-item database of local businesses, and development of first drafts of an actual survey instrument. It is efficient because it will allow more precise targeting of a degree program (CUS) that has the potential to bring in larger numbers of students. The first step in developing a Graduate Tracking System is a feasibility study to determine whether the project is one that is viable given CIT resources.
- *What would be the campus location of this request/project?* In the CIT Department and in conjunction with the Business Development Center. Some interviews off-campus may be necessary.
- *How many students (per year) will benefit? How will students benefit?* The number of CUS majors who begin the program ranges from 20 to 40 each year. The program has historically graduated about half its majors. Students will benefit because the CUS curriculum will be more precisely targeted to the needs of local employers.

Section II: Linking Planning to Budgeting - If you need Resources:

4. **Describe the resources needed**

   No additional resources are needed for implementing the Job Market Survey.

   An important resource for the Graduate Tracking System is identification of successful graduate tracking systems operated by other degree programs at Lane to use as a model. Create a database of contact information. (50 hrs of Faculty Overload @ $37.80 = $1,890 + $760 OPE = **$2,650** plus 50 hrs of Office Support time for data entry @ $11.93 = $597 + $240 OPE = **$837**).

5. **List the possible funding sources**

   Carl Perkins

   - *Can this project be partially funded?* No
   - *If so, what portion could be funded at what minimum cost?*

   If the funding source is Carl Perkins:
   How does the request meet one or two of the Carl Perkins act goals?

   Measurable Goal #1 – Improving Academic and Technical Skills
   By providing the assessment and decision-support tools needed to determine student success, and conduct a survey for the CUS program to determine what skill improvements are needed for the current market.
   Measurable Goal #7 – Counseling and Career Development
   Immediately supported by the CUS survey, but closely tied to this is the database that will allow us to follow up with graduates, and to continue to develop career-enhancing professional development opportunities offered to former students and graduates.

6. **Provide ORG & PROG codes:** ORG – 641000, PROG – 111000

7. **For programs that have advisory committees: What plans do you have for working more effectively with your Advisory Committee?**

   This initiative has, in part, developed out of conversations with our Advisory Committee on the topic of changes in the knowledge skills, and abilities they are looking for when they hire employees. We would ask the Advisory Committee to pre-test our survey for whether it asks the critical questions that would be of value to employers and also to be respondents once it was ready for implementation.

   We would ask the members of the Advisory Committee to help us identify current Lane graduates they employ, and to let us know in the future when they hire graduates from our programs, as part of the data gathered for the tracking system.

Section I: Planning

1. **Initiative Title:** Server and Client Virtualization **Division Priority: 11**

2. **How is the initiative linked to your Program Outcomes Analysis for last year? What program level outcomes do you expect to achieve?**

   Program Outcomes:

   a) New and Expanded Curriculum
   b) Improved and Expanded Delivery Modes
   c) Improved Data for Decision Support

   This initiative will address the costs and responsiveness issues that legacy / non-virtualized server and client environments can experience. Further, virtualized infrastructure provides not only more responsiveness and timeliness within problem resolution, but also more options to further the value and effectiveness of instruction to students that provides critical experience to the workplace of today.

3. **Describe the initiative**

   Servers

   A "virtualized" server environment will allow us to combine a number of servers and consolidate them on a smaller number of higher capacity and availability servers. This reduces the number of machines, reduces the number of points for potential failure, and saves money spent on replacing aging servers. Total cost of ownership is less, and operational efficiencies significantly increased.

   This is a robust solution used by many organizations. Some organizations currently using virtual environments include: Merrill Lynch, Google, AIG, Columbia Univ., Monster, Network Associates, etc., more at: *http://www.vmware.com/customers/stories/*.

   Student (Lab) Computers

   Currently the two CIT "bench" labs provide the student with both a production and a bench (or experimental learning) machine. By virtualizing the production machines the bench machines become redundant and 72 valuable computers (over $70,000 worth) can be immediately redeployed.
   This change also helps us increase capacity in both bench labs, since the space required to support each student is reduced.
   Finally, this change allows providing experimental learning in other labs with do not currently have this capability, which is a significant instructional benefit.

Section II: Linking Planning to Budgeting - If you need Resources:

4. **Describe the resources needed**

Hardware: HP ProLiant ML570 or HP ProLiant DL585 G3	$25,000
Server Software: WMWare ESX Server 4-Way (Processor License)	$6,000
Client Software: VMWare Player (currently free)	$0
Client Software: VMWare Workstation (115 licenses @ $119)	$13,685
Total	**$43,685**

Note: Over $70,000 of resources no longer needed, at a net savings of approximately $27,000.

5. **List the possible funding sources**

Carl Perkins or Tech Fee for the wireless devices

- *Can this project be partially funded?* Yes
- *If so, what portion could be funded at what minimum cost?* Just the virtualized server environment ($31,000), a partial funding of the server (some portion of $31,000), and just virtualizing the bench labs ($14,000 with $70,000 in resources able to be redeployed).

If the funding source is Carl Perkins:
How does the request meet one or two of the Carl Perkins act goals?

Measurable Goal #1 – Improving Academic and Technical Skills
The virtual servers and clients are computer hardware and software and will be used directly by students for educational purposes in a professional technical degree. This improves the environment by extending "bench" experimental learning into other labs, and by providing more instructor flexibility in configuring assignments,

Measurable Goal #3 – Nontraditional Training and Employment
By developing the virtualized client environment the department no longer has to rely on special hardware configurations for teaching and homework, accommodations for disabled students can be made (through special self-documenting configurations), and economically-disadvantaged students have the potential to work at home or at other locations than the current requirement to work in specially equipped "bench" labs.

6. **Provide ORG & PROG codes:** ORG – 641000, PROG - 112000

7. **For programs that have advisory committees: What plans do you have for working more effectively with your Advisory Committee?**

This virtualized server environment should allow us to more effectively explore novel online tools and solutions for communicating with our Advisory Committee.

Section I: Planning

1. **Initiative Title:** CS180 Curriculum Revision **Division Priority: 13**

2. **How is the initiative linked to your Program Outcomes Analysis for last year? What program level outcomes do you expect to achieve?**

   Program Outcomes:

   a) New and Expanded Curriculum
   d) Improving Retention and Student Support

   This initiative is in line with our overall effort to ensure that our graduates have as much practical, hands-on experience providing support to users as possible, before they enter the job market or return to it. We expect that students will have a more worthwhile practicum and be more prepared for their Co-op field work.

3. **Describe the initiative**

   CUS majors are currently required to take a one credit practicum in each of the fall and winter terms of their second year, prior to taking CS280US Co-op in the spring or summer before graduation. The current practicum experience consists primarily of service as a lab assistant in the CIT Open Lab (19/135). The purpose of this initiative is to revise and further develop the curriculum in CS180 to include either one or two terms of lab assistance in Lane labs outside the CIT department. The initiative would explore support opportunities in open labs elsewhere on campus, or in the new SHeD student help desk project initiated by Lane's IT department. The ultimate objective is to provide a more meaningful user support practicum experience that emphasizes troubleshooting and customer service skills for CUS majors prior to their Co-op field work with a local, off-campus employer.

   - *How does this initiative align with the strategic directions of the college?* By fostering the personal, professional, and intellectual growth of learners by providing exemplary and innovative teaching and learning experiences and student support services. Committing to a culture of assessment of programs, services and learning. Positioning Lane as a vital community partner by empowering a learning workforce in a changing economy. Building organizational capacity and systems to support student success and effective operations. Promoting professional growth and provide increased development opportunities for staff both within and outside the College.
   - *What will the product, innovation, or change of this initiative be? Please be as specific as possible.* The product will be a more worthwhile experience for students in their practicum and better preparation to take advantage of their field work Co-op.
   - *What is the need or intended use? How was that need assessed? What is your evidence of the need?* The need has been identified through feedback from students taking the CS180 course and from the faculty members responsible for leading it.

- *Given college resources, is it feasible? Is it an efficient use of college resources?* With appropriate curriculum development funds it is feasible and also very efficient, since one of the outcomes will be to structure the Practicum so that CUS students can potentially provide user support to other students on campus.
- *What would be the campus location of this request/project?* In the CIT department and potentially in conjunction with the Student Help Desk (SHeD), and other open labs on campus.
- *How many students (per year) will benefit? How will students benefit?* The CUS program has about 20-40 majors per year and all those who complete the program take CS180 twice before completion. This initiative will help ensure the employability of our graduates. It will upgrade the content of an important hands-on course.

4. **Describe the resources needed**

   One hundred (100) hours of curriculum development funds (100 @ $26.44 = $2,644 + $1,063 OPE = **$3,707**) OR one course of release time (taught by 2/6 PT faculty, $3,035 + $1,220 OPE = **$4,255**) would be required to develop the curriculum.

5. **List the possible funding sources**

   Carl Perkins or Curriculum Development

   - *Can this project be partially funded?* No
   - *If so, what portion could be funded at what minimum cost?*

   If the funding source is Carl Perkins:
   How does the request meet one or two of the Carl Perkins act goals?

   Measurable Goal #1 – Improving Academic and Technical Skills

   CS180 is a practicum class for professional-technical students, designed to improve technical skills through applied work.

   Measurable Goal #4 – Work Based Learning

   Better-defined practical learning outcomes will allow this course to be able to support work-based methods for meeting them.

6. **Provide ORG & PROG codes:** ORG – 641000, PROG – 112000

7. **For programs that have advisory committees: What plans do you have for working more effectively with your Advisory Committee?**

   We would review the current curriculum of CS180 with the Advisory Committee, as well as our proposed changes in the curriculum, to help us make sure that the course is providing graduates with the best opportunities to build the knowledge, skills, and abilities they need for employability.

Section I: Planning

1. **Initiative Title:** Revitalize the Computer Architecture course(s) **Division Priority: 14**

2. **How is the initiative linked to your Program Outcomes Analysis for last year? What program level outcomes do you expect to achieve?**

   Program Outcomes:

   a) New and Expanded Curriculum
   d) Improving Retention and Student Support

   Build curriculum that is responsive to technology, market and growth needs. This initiative attempts to fill a hole in the curriculum, meeting an ongoing well-defined need that transfer students currently must wait to satisfy until they are at a 4-yr institution. Lane has not been able to offer these courses for the past ten years. However, these courses have now been made part of the six Computer Science courses available for science transfer meeting the Math/Science requirement as part of the 45 credit transfer module and we need to respond to that market area.

3. **Describe the initiative**
   - *How does this initiative align with the strategic directions of the college?* This initiative directly supports the college's mission of enabling student career development through providing affordable, quality, lifelong educational opportunities that include lower division college transfer programs.
   - *What will the product, innovation, or change of this initiative be? Please be as specific as possible.* [see full answer below]
   - *What is the need or intended use? How was that need assessed? What is your evidence of the need?* Need is based on the professional judgment of faculty and feedback from students, community and advisory committee. CIT will be implementing systems that will allow both qualitative and quantitative assessments of need.
   - *Given college resources, is it feasible?* Yes *Is it an efficient use of college resources?* Yes
   - *What would be the campus location of this request/project?* CIT Dept
   - *How many students (per year) will benefit?* Unknown as this is a newly added course sequence to the Math/Science transfer module, but from the previous offering we are estimating approx. 70/yr dupl. headcount, 2-course 171 sequence.
   - *How will students benefit?* CS transfer majors will benefit because Oregon State University and Portland State University both require majors to take computer architecture classes. These courses are specified by the ACM/IEEE computer curriculum. Computer science and computer engineering transfer students currently must take these lower-division courses after they transfer to OSU and PSU because we have been unable to offer them for the past ten years. This would provide students with the opportunity to broaden their knowledge in the field of computer science, and provide core requirements for transfer. Additionally, all transfer majors will benefit from the additional choice of courses meeting the Math/Science requirement for both the 45-credit transfer module and the AAOT.

Section II: Linking Planning to Budgeting - If you need Resources:

4. **Describe the resources needed**

   One hundred (100) hours of curriculum development funds (100 @ $26.44 = $2,644 + $1,063 OPE = **$3,707**) OR one course of release time (taught by 2/6 PT faculty, $3,035 + $1,220 OPE = **$4,255**) would be required to develop the curriculum.

5. **List the possible funding sources**

   Carl Perkins or Curriculum Development

   - *Can this project be partially funded?* No
   - *If so, what portion could be funded at what minimum cost?*

   If the funding source is Carl Perkins:
   How does the request meet one or two of the Carl Perkins act goals?

   Measurable Goal #1 – Improving Academic and Technical Skills
   The curriculum developed is for use in a number of professional technical programs.

6. **Provide ORG & PROG codes:** ORG – 641000, PROG – 111000

7. **For programs that have advisory committees: What plans do you have for working more effectively with your Advisory Committee?**

   The Advisory Committee is focused on professional-technical programs. However, it's important to note that what CIT does in its transfer courses impacts both employment in area industry and the curriculum of professional-technical students, and is actively a part of our conversation with the Committee.

Section I: Planning

1. **Initiative Title:** Develop a Learning Community for CS 161, 162, 260 & MTH 231, 232, 233
   Division Priority: 15

2. **How is the initiative linked to your Program Outcomes Analysis for last year? What program level outcomes do you expect to achieve?**

   Program Outcomes:

   a) New and Expanded Curriculum
   b) Improved and Expanded Delivery Modes
   d) Improving Retention and Student Support

   Build curriculum that is responsive to technology, market and growth needs. Building a learning community will function both to strengthen and integrate the curriculum and also to provide a better learning context for students, providing them with better support and because of that, better retention.

3. **Describe the initiative**
   - *How does this initiative align with the strategic directions of the college?* This initiative directly supports the college's Mission to provide quality lower division college transfer programs. This initiative is an example of the learning core value of working together to create a learning-centered environment. This initiative also supports the innovation core value of the college by creating a new synergism between disciplines that will make our transfer students more successful at four-year institutions.
   - *What will the product, innovation, or change of this initiative be? Please be as specific as possible.* [see full answer below]
   - *What is the need or intended use? How was that need assessed? What is your evidence of the need?* Need is based on the professional judgment of faculty and feedback from students, community and Advisory Committee. CIT will be implementing systems that will allow both qualitative and quantitative assessments of need.
   - *Given college resources, is it feasible?* Yes *Is it an efficient use of college resources?* Yes
   - *What would be the campus location of this request/project?* CIT Dept
   - *How many students (per year) will benefit?* 35-50/yr
   - *How will students benefit?* This initiative is to create a Learning Community for Computer Science Transfer students. Students in computing majors transferring to a four-year institution are expected to have an integrated knowledge of programming and discrete mathematics that students in the professional-technical CIT majors are not required. By creating a learning community we can create more collaboration between the computer science and discrete mathematics sequences of courses. This initiative will better prepare computer science transfer students to think critically and solve problems effectively. Students will get more out of the related sequences and be better prepared for their discipline of study at four-year institutions, therefore being more likely to succeed. The class sections are already being taught, so no new sections will be required.

Section II: Linking Planning to Budgeting - If you need Resources:

4. **Describe the resources needed**

   Three hundred (300) hours curriculum development (300 @ $26.44 = $7,932 + $3,189 OPE = **$11,121**) OR three classes of release time (taught by 2/6 PT faculty, $9,105 + $3,660 OPE = **$12,765**) would be required for one faculty each from CIT and Math.

5. **List the possible funding sources**

   Carl Perkins or Curriculum Development

   - *Can this project be partially funded?* No
   - *If so, what portion could be funded at what minimum cost?*

   If the funding source is Carl Perkins:
   How does the request meet one or two of the Carl Perkins act goals?

6. **Provide ORG & PROG codes:** ORG – 641000, PROG – 111000

7. **For programs that have advisory committees: What plans do you have for working more effectively with your Advisory Committee?**

   N/A

Section I: Planning

1. **Initiative Title:** Wireless Networking **Division Priority: 16**

2. **How is the initiative linked to your Program Outcomes Analysis for last year? What program level outcomes do you expect to achieve?**

   Program Outcomes:

   a) New and Expanded Curriculum
   d) Improving Retention and Student Support

   This initiative addresses the desire to increase FTE by attracting IT employees from the community, and modernizing the Network course offerings. By increasing the skill set of our majors in an area of critical importance to employers, we are enhancing their job opportunities.

3. **Describe the initiative**

   Many organizations have added wireless capabilities in recent years. Currently, network majors receive only conceptual information on wireless networking as a small part of one course. We need to increase wireless networking theory, as well as provide a hands-on experience for our majors by offering a full course on this topic. Since there are usually 35 to 45 Networking students, two sections of this course will most likely be needed. The course would be taught in the existing Bldg 19 lab room facilities, but would require purchase of wireless networking hardware. Since many organizations use wireless networking, this project would make the Network Degree graduates more employable. The course would also attract members of the community wanting to supplement their technical knowledge in this area.

Section II: Linking Planning to Budgeting - If you need Resources:

4. **Describe the resources needed**

   One hundred (100) hours of curriculum development funds (100 @ $26.44 = $2,644 + $1,063 OPE = **$3,707**) **OR** one course of release time (taught by 2/6 PT faculty, $3,035 + $1,220 OPE = **$4,255**) would be required to develop the curriculum.

   Part of a faculty member's workload. If this initiative resulted in an entire course on wireless networking, two sections per year would be offered.

   The hardware needed would include 25 wireless routers and 25 wireless NICs. Estimated cost is **$10,000**.

5. **List the possible funding sources**

   Curriculum Development or Release Time, and Carl Perkins or Tech Fee for the wireless devices.

- *Can this project be partially funded?* Yes
- *If so, what portion could be funded at what minimum cost?* If faculty release time is provided for course development and instructors are found to teach the course, all that would be needed is the wireless devices.

If the funding source is Carl Perkins:
How does the request meet one or two of the Carl Perkins act goals?

The wireless devices are computer hardware and will be used directly by students for educational purposes in a professional technical degree.

Measurable Goal #1 – Improving Academic and Technical Skills

This curriculum is for use in professional-technical programs.

Measurable Goal #6 – Post-secondary Connections

This course is a candidate for RTEC curriculum in area high schools.

6. **Provide ORG & PROG codes:** ORG – 641000, PROG – 112000

7. **For programs that have advisory committees: What plans do you have for working more effectively with your Advisory Committee?**

   Our Advisory Committee discussions have included identifying a need for significant new curriculum – this initiative is in part a response to those discussions.

   We plan to ask the CIT Advisory Committee to provide input on course planning, and to provide feedback on the curriculum once it is developed.

Section I: Planning

1. **Initiative Title:** Additional Option for Programming Majors **Division Priority: 17**

2. **How is the initiative linked to your Program Outcomes Analysis for last year? What program level outcomes do you expect to achieve?**

   Program Outcomes:

   a) New and Expanded Curriculum
   d) Improving Retention and Student Support

   It addresses the desire to increase FTE by attracting IT employees from the community, and modernizing the Programming course offerings. By broadening the skill set of our majors we are enhancing their job opportunities.

3. **Describe the initiative**

   This project will add a three course sequence of programming courses and will provide programming majors with an alternative to the C++ Gaming Option described above. The courses could also be taken by any second year CIT student as an elective. In addition, the courses could provide professional development opportunities to working programmers. It is anticipated that at least one section of each course would be offered, serving 18 to 30 students each term. Potential topics for the sequence include but are not limited to: Database Programming, GIS Programming, Object Oriented Programming in .NET, Java Web Programming.

   The project would develop a database of contact information for programming department managers, programmers and previous programming graduates, and would use that information to gather information regarding both the relative importance of the potential topics and the delivery method that allows for maximum participation by programmers in the field. The same database can be used to communicate with networking and user support professionals and to market new security and wireless networking courses.

   It is a very efficient use of college resources. For 300 hours of curriculum development the college would broaden the programming skills of CIT students, increase FTE and develop a stronger connection to the programming community by offering a more appropriate set of professional development opportunities.

Section II: Linking Planning to Budgeting - If you need Resources:

4. **Describe the resources needed**

   Three hundred (300) hours curriculum development (300 @ $26.44 = $7,932 + $3,189 OPE = **$11,121**) OR three classes of release time (taught by 2/6 PT faculty, $9,105 + $3,660 OPE = **$12,765**).

Create a database of contact information. (50 hrs of Faculty Overload @ $37.80 = $1,890 + $760 OPE = **$2,650** plus 50 hrs of Office Support time for data entry @ $11.93 = $597 + $240 OPE = **$837**).

5. **List the possible funding sources**

   Curriculum Development or Release Time, and Carl Perkins or Tech Fee for the removable drives. Professional Development funds for some, but not all of the professional development needed.

   - *Can this project be partially funded?* Yes
   - *If so, what portion could be funded at what minimum cost?* If the curriculum development is only partially funded, progress would be made on the project. For example, 50 hours to create the database and gather contact information plus 100 hours of curriculum funds would provide for the identification of the topic for the new sequence and the development of the first course. (50 hrs of Faculty Overload @ $37.80 = $1,890 + $760 OPE = **$2,650** plus 50 hrs of Office Support time for data entry @ $11.93 = $597 + $240 OPE = **$837**) & (100 @ $26.44 = $2,644 + $1,063 OPE = **$3,707)**.

   If the funding source is Carl Perkins:
   How does the request meet one or two of the Carl Perkins act goals?

   Measurable Goal #1 – Improving Academic and Technical Skills
   This curriculum is for use in professional-technical programs.
   Measurable Goal #6 – Post-secondary Connections
   This course is a candidate for RTEC curriculum in area high schools.

6. **Provide ORG & PROG codes:** ORG – 641000, PROG – 112000

7. **For programs that have advisory committees: What plans do you have for working more effectively with your Advisory Committee?**

   Market pressures on the programming industry increasingly require students to distinguish themselves in terms of specializations. This is an area of active conversation with our Advisory Committee, and implementing this sequence for gaming is part of the Department's efforts in this area.

   We plan to seek input on the most important technical areas needed by students seeking employment in the programming field and the gathering of contact data. Advisory Committee members will serve as a valuable resource in determining the topic for the sequence.

Section I: Planning

1. **Initiative Title:** Coordination with Programs Requiring CIT Service Courses

   Division Priority: 18

2. **How is the initiative linked to your Program Outcomes Analysis for last year? What program level outcomes do you expect to achieve?**

   Program Outcomes:

   c) Improved Data for Decision Support
   d) Improving Retention and Student Support
   e) Improved Marketing

   Build curriculum that is responsive to technology, market and growth needs. One significant potential area for curricular responsiveness and program growth is in meeting "market" demand that is internal to the college.

3. **Describe the initiative**
   - *How does this initiative align with the strategic directions of the college?* This project improves the quality of the many technical programs that require computer-based skills by helping ensure that the appropriate courses and their content are applicable to the programs. It meets the innovation, collaboration, and partnership core values.
   - *What will the product, innovation, or change of this initiative be? Please be as specific as possible.* [see full answer below]
   - *What is the need or intended use? How was that need assessed? What is your evidence of the need?* Need is based on the professional judgment of faculty and feedback from students, community and Advisory Committee. CIT is implementing systems that will allow both qualitative and quantitative assessments of need.
   - *Given college resources, is it feasible?* Yes *Is it an efficient use of college resources?* Yes
   - *What would be the campus location of this request/project?* CIT Dept.
   - *How many students (per year) will benefit?* Unknown, approx. 1400 in service courses dupl. headcount 03-04
   - *How will students benefit?* The various departments and programs at LCC that require their students to take one of the CIT service courses need to have good communication and coordination with the CIT Department to ensure that the courses are meeting the needs of the programs. Students will be able to better understand the fundamental usage of computers as applied to their fields of study and their future professional area. This initiative provides the basis for fundamental knowledge and skill development in computing for students. This initiative also directly strengthens student's core ability to use technology and be better prepared in their discipline of study. The appropriate level of skills enables students to meet career enhancement goals.

Section II: Linking Planning to Budgeting - If you need Resources:

4. **Describe the resources needed**

   Release time (4 credit class at 2/6 pay - $3,035 + $1,220 OPE = **$4,255**).

5. **List the possible funding sources**
   - *Can this project be partially funded?* No
   - *If so, what portion could be funded at what minimum cost?*

   If the funding source is Carl Perkins:
   How does the request meet one or two of the Carl Perkins act goals?

6. **Provide ORG & PROG codes:** ORG – 641000, PROG – 111000

7. **For programs that have advisory committees: What plans do you have for working more effectively with your Advisory Committee?**

   As we redesign the Computing services courses the course outcomes will be reviewed by the advisory committees in the various affected areas, for input and adjustment.

Section I: Planning

1. **Initiative Title:** Wide Area Networking Theory & Troubleshooting **Division Priority: 19**

2. **How is the initiative linked to your Program Outcomes Analysis for last year? What program level outcomes do you expect to achieve?**

   Program Outcomes:

   a) New and Expanded Curriculum
   d) Improving Retention and Student Support

   This initiative addresses the desire to increase FTE by attracting IT employees from the community, and modernizing the Network course offerings. By increasing the skill set of our majors in an area of critical importance to employers, we are enhancing their job opportunities.

3. **Describe the initiative**

   We need to add theory and hands-on activities covering Wide Area Networking (WAN) and troubleshooting to the Network Degree curriculum. The CIT Advisory Committee has recommended that we have more WAN curriculum in the program. We need to evaluate how best to integrate more WAN theory and troubleshooting curriculum into the degree. This would give us the background to develop the necessary curriculum. Since there are usually 35 to 45 networking students, if this initiative resulted in an entire course on WAN theory and troubleshooting, two additional sections of this course would be offered. The course would be taught in the Bldg 19 lab room facilities, but would require purchase of WAN hardware. Since many organizations use WAN technology, this project would make the Network Degree graduates more employable. The course would also attract members of the community wanting to supplement their technical knowledge in this area.

Section II: Linking Planning to Budgeting - If you need Resources:

4. **Describe the resources needed**

   One hundred (100) hours of curriculum development funds (100 @ $26.44 = $2,644 + $1,063 OPE = **$3,707**) **OR** one course of release time (taught by 2/6 PT faculty, $3,035 + $1,220 OPE = **$4,255**) would be required to develop the curriculum.

   Part of a faculty member's workload. If this initiative resulted in an entire course on WAN theory, two sections per year would be offered.

   The WAN hardware needed would include an integrated access device for simulating various WAN technologies. Estimated cost is **$6,000**.

5. **List the possible funding sources**

   Curriculum Development or Release Time, and Carl Perkins or Tech Fee for the WAN device.

   - *Can this project be partially funded?* Yes
   - *If so, what portion could be funded at what minimum cost?* If faculty release time is provided for curriculum development and instructors are found to teach the course, all that would be needed is the WAN device.

   If the funding source is Carl Perkins:
   How does the request meet one or two of the Carl Perkins act goals?

   Measurable Goal #1 – Improving Academic and Technical Skills
   This curriculum is for use in professional-technical programs.
   Measurable Goal #6 – Post-secondary Connections
   This course is a candidate for RTEC curriculum in area high schools.

6. **Provide ORG & PROG codes:** ORG – 641000, PROG – 112000

7. **For programs that have advisory committees: What plans do you have for working more effectively with your Advisory Committee?**

   Our Advisory Committee discussions have included identifying a need for significant new curriculum – this initiative is in part a response to those discussions.

   We plan to ask the CIT Advisory Committee to provide input on curriculum planning, and to provide feedback on the curriculum once it is developed.

Section I: Planning

1. **Initiative Title:** CIS226 Curriculum Revision **Division Priority: 20**

2. **How is the initiative linked to your Program Outcomes Analysis for last year? What program level outcomes do you expect to achieve?**

   Program Outcomes:

   a) New and Expanded Curriculum
   d) Improving Retention and Student Support

   A thorough review and revamping of the learning outcomes and the activities of the course is needed to make sure that a student can effectively go into a small or medium-sized enterprise and be ready to perform the expected tasks, especially as they may relate to operating a small network as well as provide application and hardware trouble-shooting capabilities. In this way, the revamping of CIS226 (and potentially other courses earlier in the majors' sequence) is a follow-up to the information we expect to gain from the Employer Survey described above.

3. **Describe the initiative**

   CIS 226 is the final course taken by Computer User Support majors (Spring Term of Second Year). For several years we have worked on making the course into a true capstone experience in which the majors demonstrate the knowledge, skills, and abilities they will need in the workplace. For example, we have introduced curricular elements including the hands-on use of an incident management system that places them in the work context of a help desk as well as other assignments which allow a summative evaluation of skills which have been evaluated formatively in earlier second-year courses.

   - *How does this initiative align with the strategic directions of the college?* By fostering the personal, professional, and intellectual growth of learners by providing exemplary and innovative teaching and learning experiences and student support services. Committing to a culture of assessment of programs, services and learning. Positioning Lane as a vital community partner by empowering a learning workforce in a changing economy. Building organizational capacity and systems to support student success and effective operations. Promoting professional growth and provide increased development opportunities for staff both within and outside the College.
   - *What will the product, innovation, or change of this initiative be? Please be as specific as possible.* The product of this innovation will be to ensure we have a method of checking whether students have gained the knowledge, skills and abilities they need for the work force and a method for them to demonstrate this in a hands-on fashion.
   - *What is the need or intended use? How was that need assessed? What is your evidence of the need?* We assess the need to work on CIS266 from having examined our entire second-year curriculum and from having studied capstone classes at other community colleges.

- *Given college resources, is it feasible? Is it an efficient use of college resources?* The project is feasible because in the last two years work has already begun on tuning up CIS226, and because it will help make graduates more employable and thus make the program more attractive to potential students and to local employers.
- *What would be the campus location of this request/project?* CIT Dept
- *How many students (per year) will benefit? How will students benefit?* The CUS program has about 20-40 majors per year and all those who complete the program take CIS226 as a requirement just before completion. This initiative will help ensure the employability of our graduates. It will bring the content of an important course, a capstone course, into synchronization with the needs of employers as we have identified them in a current survey (see above).

4. **Describe the resources needed**

   One hundred (100) hours of curriculum development funds (100 @ $26.44 = $2,644 + $1,063 OPE = **$3,707**) **OR** one course of release time (taught by 2/6 PT faculty, $3,035 + $1,220 OPE = **$4,255**) would be required to develop the curriculum.

5. **List the possible funding sources**

   Carl Perkins or Curriculum Development

   - *Can this project be partially funded?* No
   - *If so, what portion could be funded at what minimum cost?*

   If the funding source is Carl Perkins:
   How does the request meet one or two of the Carl Perkins act goals?

   Measurable Goal #1 – Improving Academic and Technical Skills
   This curriculum is for use in professional-technical programs.

6. **Provide ORG & PROG codes:** ORG – 641000, PROG – 112000

7. **For programs that have advisory committees: What plans do you have for working more effectively with your Advisory Committee?**

   We would review the current curriculum of CS226 with the Advisory Committee, as well as our proposed changes in the curriculum, to help us make sure that the course is providing graduates with the best opportunities to build the knowledge, skills, and abilities they need for employability.

Section I: Planning

1. **Initiative Title:** Participation of Students in Computer Science Professional Organizations
   Division Priority: 21

2. **How is the initiative linked to your Program Outcomes Analysis for last year? What program level outcomes do you expect to achieve?**

   An essential aspect of retaining students lies in cultivating mentorship and professional development for them. This initiative attempts to address this with dedicated faculty involvement in providing this for students.

3. **Describe the initiative**
   - *How does this initiative align with the strategic directions of the college?* This initiative directly impacts the options available to Computer Science Transfer students and increases knowledge and skill development for students. This initiative indirectly strengthens a student's ability to understand careers in computer science and be better prepared in their discipline of study. The appropriate level of skills enables students to meet career enhancement goals. It meets the learning and innovation core values.
   - *What will the product, innovation, or change of this initiative be? Please be as specific as possible.* [see full answer below]
   - *What is the need or intended use? How was that need assessed? What is your evidence of the need?* Need is based on the professional judgment of faculty and feedback from students, community and Advisory Committee. CIT is implementing systems that will allow both qualitative and quantitative assessments of need.
   - *Given college resources, is it feasible?* Yes *Is it an efficient use of college resources?* Yes
   - *What would be the campus location of this request/project?* CIT Dept
   - *How many students (per year) will benefit?* Unknown, ~40/yr
   - *How will students benefit?* Computer Science Transfer students could belong to computer science professional organizations such as the ACM and IEEE Computer Societies. Membership in these organizations provide students with the opportunity to better understand a career in computer science, understand topics more in depth, broaden their understanding of the field of computer science, and develop connections to academic and community organizations involved in computer science in the state of Oregon.

Section II: Linking Planning to Budgeting - If you need Resources:

4. **Describe the resources needed**

   Release time (4 credit class at 2/6 pay - $3,035 + $1,220 OPE = **$4,255**).

5. **List the possible funding sources**

   General Fund

   - *Can this project be partially funded?* No
   - *If so, what portion could be funded at what minimum cost?*

   If the funding source is Carl Perkins: N/A
   How does the request meet one or two of the Carl Perkins act goals?

6. **Provide ORG & PROG codes:** ORG – 641000, PROG – 111000

7. **For programs that have advisory committees: What plans do you have for working more effectively with your Advisory Committee?**

   N/A

Lane Community College
Unit Planning: Instruction & Student Services
Computer Information Technology Department
Unit Plan 05-06

VP/AVP/ED Responsible	Division/Unit	Division Priority	Date of Initiative	Expected completion date	Initiative Title	Resource Description	$$	Recurring / Nonrecurring	Resource Type (mark with an "X")				Funding Sources (mark with an "X")						
									Payroll	Equipment	Space	Other	Existing	New Gen Fund	Carl Perkins	Stud Tech Fee	Curr Dev	Recruitment	Other
PL	BCT-CIT	1	7/1/2006	6/30/2007	CIT Open Lab (19/135) Lab Aides Funding	Hourly Timesheet Funding	$49,112.00	Y	X					X		X			
PL	BCT-CIT	3	7/1/2006	9/15/2006	Computer Survey Course for Core Curriculum	Curr Dev (100 hrs) OR	$3,707.00	N	X						X		X		
PL	BCT-CIT	3	4/1/2006	6/30/2006	Computer Survey Course for Core Curriculum	4 Cr Release Time	$4,255.00	N	X						X				
PL	BCT-CIT	5	7/1/2006	12/30/2006	Mini-Certificate Curriculum	Curr Dev (200 hrs) OR	$7,414.00	N	X						X		X		
PL	BCT-CIT	5	4/1/2006	3/30/2007	Mini-Certificate Curriculum	8 Cr Release Time	$8,510.00	N	X					X	X				
PL	BCT-CIT	5	7/1/2006	12/30/2006	Mini-Certificate Curriculum	Curr Dev (200 hrs) OR	$7,414.00	N	X						X		X		
PL	BCT-CIT	5	4/1/2006	3/30/2007	Mini-Certificate Curriculum	8 Cr Release Time	$8,510.00	N	X					X	X				
PL	BCT-CIT	5	2/1/2006	12/30/2006	Mini-Certificate Curriculum	Prof Dev	$2,000.00	N				X			X				X
PL	BCT-CIT	5	2/1/2006	12/30/2006	Mini-Certificate Curriculum	Prof Dev	$2,000.00	N				X			X				X
PL	BCT-CIT	5	7/1/2006	12/30/2006	Mini-Certificate Curriculum	Removable drives	$3,500.00	N		X					X	X			
PL	BCT-CIT	7	4/1/2006	12/30/2006	Faculty Professional Development	Prof Dev	$28,500.00	N				X			X				X
PL	BCT-CIT	9	4/1/2006	12/30/2006	Marketing Infrastructure: Job Survey & Graduate Tracking	None	$0.00	N					X						
PL	BCT-CIT	9	4/1/2006	3/30/2007	Marketing Infrastructure: Job Survey & Graduate Tracking	Create Database	$3,487.00	N	X						X			X	
PL	BCT-CIT	11	4/1/2006	6/30/2007	Server & Client Virtualization	Hardware & Software	$43,685.00	N		X					X	X			
PL	BCT-CIT	13	7/1/2006	12/30/2006	CS180 Curriculum Revision	Curr Dev (100 hrs) OR	$3,707.00	N	X						X		X		
PL	BCT-CIT	13	4/1/2006	3/30/2007	CS180 Curriculum Revision	4 Cr Release Time	$4,255.00	N	X						X				
PL	BCT-CIT	14	7/1/2006	12/30/2006	Revitalize the Computer Architecture course(s)	Curr Dev (100 hrs) OR	$3,707.00	N	X						X		X		
PL	BCT-CIT	14	4/1/2006	3/30/2007	Revitalize the Computer Architecture course(s)	4 Cr Release Time	$4,255.00	N	X						X				
PL	BCT-CIT	15	7/1/2006	3/30/2007	CS161, 162, 260 & MTH231, 232, 233	Curr Dev (300 hrs) OR	$11,121.00	N	X						X		X		
PL	BCT-CIT	15	4/1/2006	3/30/2007	CS161, 162, 260 & MTH231, 232, 234	12 Cr Release Time	$12,765.00	N	X						X				
PL	BCT-CIT	16	7/1/2006	12/30/2006	Wireless Networking	Curr Dev (100 hrs) OR	$3,707.00	N	X						X		X		
PL	BCT-CIT	16	4/1/2006	12/30/2006	Wireless Networking	4 Cr Release Time	$4,255.00	N	X						X				
PL	BCT-CIT	16	7/1/2006	12/30/2006	Wireless Networking	Hardware	$10,000.00	N		X					X	X			
PL	BCT-CIT	17	7/1/2006	3/30/2007	Additional Option for Programming Majors	Curr Dev (300 hrs) OR	$11,121.00	N	X						X		X		
PL	BCT-CIT	17	4/1/2006	3/30/2007	Additional Option for Programming Majors	12 Cr Release Time	$12,765.00	N	X						X				
PL	BCT-CIT	17	7/1/2006	3/30/2007	Additional Option for Programming Majors	Create Database	$3,487.00	N	X						X				X
PL	BCT-CIT	18	4/1/2006	3/30/2007	Coordination with Programs Requiring CIT Service courses	Release time/Part-time faculty back-fill	$4,255.00	Y	X					X	X			X	
PL	BCT-CIT	19	7/1/2006	12/30/2006	Wide Area Networking Theory & Troubleshooting	Curr Dev (100 hrs) OR	$3,707.00	N	X						X		X		
PL	BCT-CIT	19	4/1/2006	3/30/2007	Wide Area Networking Theory & Troubleshooting	4 Cr Release Time	$4,255.00	N	X						X				
PL	BCT-CIT	19	7/1/2006	12/30/2006	Wide Area Networking Theory & Troubleshooting	Hardware	$6,000.00	N		X					X	X			
PL	BCT-CIT	20	7/1/2006	12/30/2006	CIS226 Curriculum Revision	Curr Dev (100 hrs) OR	$3,707.00	N	X						X		X		
PL	BCT-CIT	20	4/1/2006	3/30/2007	CIS226 Curriculum Revision	4 Cr Release Time	$4,255.00	N	X						X				
PL	BCT-CIT	21	7/1/2006	3/30/2007	Participation of Students in Computer Science Professional Organizations	Release time/Part-time faculty back-fill	$4,255.00	Y	X					X	X				