College Mission Statement

Honolulu Community College’s mission is to:

- Serve the community as an affordable, flexible, learning centered, open-door comprehensive Community College that meets the post-secondary educational needs of individuals, businesses, and the community.
- Serve the Pacific Rim as the primary technical training center in areas such as transportation, information technology, education, communications, construction, and public and personal services.

Program Mission Statement

The Computing, Electronics, and Networking Technology program's mission is to serve the community as a learning-centered, open door program that provides technical training to meet the demands of the information technology industry and the needs of the individual. The program is designed to provide the student with a mixture of knowledge and hands-on training with an emphasis on preparing students for entry level employment in the information technology industry.

Part I: Quantitative Indicators for Program Review

<table>
<thead>
<tr>
<th></th>
<th>Fall of Year</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
</tr>
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<tbody>
<tr>
<td>Annual New and Replacement Positions State</td>
<td>C/P</td>
<td>244 / 77</td>
<td>55</td>
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<tr>
<td>Annual New and Replacement Positions County</td>
<td>C/P</td>
<td>189 / 64</td>
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<tr>
<td>Number Majors</td>
<td></td>
<td>203</td>
<td>201</td>
<td>179</td>
</tr>
<tr>
<td>SSH for Program Majors all Program Classes</td>
<td></td>
<td>977</td>
<td>994</td>
<td>909</td>
</tr>
<tr>
<td>SSH for non program majors in all program classes</td>
<td></td>
<td>1210</td>
<td>1075</td>
<td>1,074</td>
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<tr>
<td>SSH for all students in all program classes</td>
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<td>2,187</td>
<td>2,069</td>
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<tr>
<td>FTE Program Enrollment</td>
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<td>145.80</td>
<td>137.93</td>
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<tr>
<td>Number of Classes Taught</td>
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<td>34</td>
<td>36</td>
<td>35</td>
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<tr>
<td>Average Class Size</td>
<td></td>
<td>19.47</td>
<td>17.31</td>
<td>17.34</td>
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<tr>
<td>Class Fill Rate</td>
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<td>83.80</td>
<td>80.60</td>
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<tr>
<td>FTE (headcount) of BOR Appointed Program Faculty</td>
<td></td>
<td>8.0</td>
<td>8.0</td>
<td>5.0</td>
</tr>
<tr>
<td>Student/ Faculty Ratio (calculated field)</td>
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<td>25.4</td>
<td>25.1</td>
<td>35.8</td>
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<tr>
<td>Number of Majors Per FTE (workload) Faculty</td>
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<td>27.18</td>
<td>24.51</td>
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<td>Program Budget Allocation</td>
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<td>$316,280</td>
<td>$315,565</td>
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<td>Cost Per SSH (Calculated field)</td>
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<td>$145</td>
<td>$153</td>
<td>C/P</td>
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<tr>
<td>Number of classes that Enroll less than 10 students</td>
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<td>8</td>
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<tr>
<td>Persistence Fall to Spring</td>
<td></td>
<td>69.46</td>
<td>66.17</td>
<td>68.16</td>
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<tr>
<td>Number of Degrees Earned</td>
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<td>31</td>
<td>33</td>
<td>27</td>
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<tr>
<td>Number Certificates Earned</td>
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<td>0</td>
<td>0</td>
<td>0</td>
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<tr>
<td>Number of Students Transferred</td>
<td></td>
<td>9</td>
<td>4</td>
<td>3</td>
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<tr>
<td>Perkins Core Indicator - 1P1 Academic Achievement</td>
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<td>80.88</td>
<td>83.61</td>
<td>93.02</td>
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<tr>
<td>Perkins Core Indicator - 1P2 Vocational Skills</td>
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<td>91.55</td>
<td>100.00</td>
<td>95.74</td>
</tr>
<tr>
<td>Perkins Core Indicator - 2P1 Credential Conferred</td>
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<td>29.58</td>
<td>39.06</td>
<td>27.66</td>
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<tr>
<td>Perkins Core Indicator - 3P1 Placement in Employment</td>
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<td>69.44</td>
<td>57.14</td>
<td>84.00</td>
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<td>Perkins Core Indicator - 3P2 Retention in Employment</td>
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<td>Perkins Core Indicator - 4P1 Non Traditional Participation</td>
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<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
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<tr>
<td>Perkins Core Indicator - 4P2 Non Traditional Completion</td>
<td></td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>
Part II: Analysis of the Program

- **Instructional faculty who taught in the Fall 2007 / Spring 2008 semesters**
  - Michael Castell, M.S., Information Systems, Hawaii Pacific University. Mike's areas of responsibility in the CENT program include data communications, networking, computer hardware and hardware repair. Mike is A+ certified, CCNA certified and a Cisco Certified Academy Instructor (CCAI/CCNA).
  - Sally Dunan, M.S., Information and Computing Sciences, University of Hawaii. Sally's areas of responsibility in the CENT program include networking, information systems security, and Linux system administration. Sally is a Cisco Certified Academy Instructor (CCAI/CCNA). She holds the CCNA and Certified Information Systems Security Professional (CISSP) certifications.
  - Paul Jacoby, A.S., Electronics, Honolulu Community College. Paul's areas of responsibility in the CENT program include electronics, computer hardware and hardware repair. Paul's certifications include FCC (GROL), A+, Network+, i-Net+, Server+, HTI+, and Wireless#.
  - Ken Johnson, DR.P.H., University of Hawaii. Ken is full-time HCC faculty in the Cooperative Education Program and coordinates the CENT Internship and Coop courses each semester.
  - David Pai, PhD, Communication and Information Sciences, University of Hawaii. Dave's areas of responsibility in the CENT program included microcomputer operating systems, database systems, internet applications/web applications, and project management.
  - Vern Takebayashi, M.S., University of Hawaii. Vern is full-time faculty for the ICS program and teaches Introduction to Information Systems for the CENT program as part of his full-time teaching load.
  - Aaron Tanaka, M.S., Electrical Engineering, University of Hawaii. Aaron is the CENT program liaison and his areas of responsibility in the CENT program include microcomputer operating systems, network operating systems and network security. Aaron is a Microsoft IT Academy instructor and holds the following certifications: Certified Information Systems Security Professional (CISSP), MCT, MCSE Server 2003, Cisco Certified Academy Instructor (Network Security), CompTIA A+.

- **Instructional lecturers who taught in the Fall 2007 / Spring 2008 semesters**
  - No lecturers taught courses in the CENT program in the Fall 2007/Spring 2008 semesters.

- **Non-instructional (support) faculty or staff for the Fall 2007 / Spring 2008 semesters**
  - Gerald Chen, M.S., Information Systems, Hawaii Pacific University. Gerald provides full-time academic support to the CENT program. Gerald is CCNA certified, a Cisco Academy instructor, and a Microsoft Certified Systems Engineer (MCSE).
**Resources**

- The CENT program presently occupies Building 13 and Building 20 at the HCC campus, which are small buildings that provide computer lab classrooms and lab space suitable for the courses we teach. The additional computer lab classroom in Building 2 which we previously used has been reassigned to the MELE program. The course that was previously taught in that classroom is now being taught in an ICS lab classroom in Bldg 2 room 614.

- We currently have three up-to-date computer lab classrooms used for teaching a variety of courses including networking, operating systems, system administration, and information systems security.

- One of our computer lab classrooms is configured to be used as a networking lab and also includes a variety of networking devices including Cisco routers, switches, and wide area networking simulators used as part of the Cisco networking curriculum.

- In addition to the above computer lab classrooms, we also have a telecommunications lab/classroom which provides equipment required for teaching our data communications course. This includes specialized equipment such as the AX4000 network card, telecommunications test equipment, and older computers which reasonably meet the needs for this course.

- We also maintain two labs with a variety of computers and printers used to support computer hardware courses. This equipment allows students the opportunity to work with a range of equipment including older computers and some newer computers.

**Articulation Agreements**

- We have an existing articulation with Hawaii Pacific University that allows graduates of our A.S. and A.P.C. programs to complete a Bachelor of Arts in System Administration at HPU.

- During the Fall 2007/Spring 2008 academic year We also completed an articulation agreement with UH West Oahu (UHWO) that will allow graduates of our A.S. and A.P.C. programs to complete a Bachelor of Applied Science specializing in Computing, Electronics, and Networking Technology at UHWO. This agreement was initiated for the Fall 2008 semester.

**Program strengths**

- The strengths of this program include well-qualified faculty, our own full-time academic support staff member, three up-to-date computer lab classrooms, the availability of required technical training through the Pacific Center for Advanced Technology Training (PCATT), a well-designed program, and strong connections with academic institutions such as Hawaii Pacific University and UH West Oahu that provide our students with pathways to completing baccalaureate degrees in programs developed to complement our A.S. and A.P.C. programs.
*Program weaknesses*

- With the implementation of the B.A.S. at UHWO, we need to provide a clearer delineation of our legacy networking and telecommunication program for the benefit of students who are still interested in completing only the A.S. degree program, instead of a full 4 year program.

*Program opportunities*

- Our opportunities include building and strengthening our recently completed articulation with U.H. West Oahu, which provides a baccalaureate program for our students within the University of Hawaii System.

- We are currently in the process of expanding our program to include basic instruction in a broader range of related technologies, such as web and database administration. We intend to add more courses in these areas as the B.A.S. program becomes established.

- We have also received Perkins grant funding to procure upgraded equipment for our networking and telecommunications labs and to perform preliminary research for the development of a Certificate of Achievement in Networking and Telecommunications. The proposed Certificate of Achievement will strengthen our legacy core in the area of Networking and Telecommunications for students primarily interested in the A.S. degree program.

- We are also working toward the establishment of an IT Academy program in cooperation with the ICS department, to provide a stronger link between high schools and the community colleges for post-secondary training in information technology related fields. We anticipate that the IT Academy program and the CENT program will jointly provide students with solid training opportunities for information technology with both two and four year exit points.

*The challenges facing our program include:*

- Keeping our program up-to-date with changing technology with limited budgets for updating equipment. Because the technology we support changes so quickly, we need to update our programs and courses on a regular basis in order to ensure that we are teaching the courses that best reflect current technologies and industry requirements.

- Limited time for faculty to acquire training and technology updates. The faculty must also take related courses and update our knowledge and skills on an ongoing basis to ensure that our program remains current.

- In order to achieve this, we need to establish and maintain regular schedules for equipment updates and for faculty training and updates.

- As our full-time teaching loads do not permit time on a regular basis for training and technology updates, these are tasks that our faculty routinely perform outside the contract year. The contract-based annual teaching assignment reductions only permit us to take a one course reduction every third semester because our normal full-time teaching load is based on lecture/lab courses that do not work well within the defined teaching assignment reductions.
Achievement of Program and Course SLOs

- We feel the methods currently used to assess achievement of program and course student learning outcomes provide sufficient information for evaluation of student learning. However, we may need to refine the way we document assessment results, in order to more clearly delineate the processes used and to more clearly state the results of the assessments performed.

- As students progress through our programs we observe visible growth in their level of technical knowledge, proficiency, and confidence. Additionally, we frequently receive favorable employer feedback regarding the performance of our graduates.

- We assess and collect evidence of student achievement of program learning outcomes using a variety of methods including hands-on student laboratories, student written projects, student oral reports, student group projects, written exams, and hands-on (skills) exams.

Does the program have sufficient resources to promote student learning? Are other resources needed such as personnel, facilities, or equipment? If additional resources are required, what evidence/rationale is there to support this?

- As a result of the departure of two of our faculty members at the end of the 2007/2008 academic year, we are currently operating with only three regularly assigned faculty members. Because of low course enrollments during the past few years, we have sufficient faculty for the current year. However, as the B.A.S. in CENT at UHWO gains strength, we will need to hire more faculty to allow offering additional courses for our third and fourth year students. We already have funded positions that will be needed, once our course enrollments increase enough to require additional faculty.

- We currently have sufficient equipment to teach the program for the existing low enrolled courses, but we need to procure additional equipment to fully support our networking curriculum. We currently have enough up-to-date routers to support a maximum course enrollment of 10 students in our first networking course. We are in the process of procuring 6 newer routers through Perkins grant funding, which will provide enough routers to support a maximum course enrollment of 14 students. In order to support a maximum course enrollment of 20 students, we will need to procure an additional 9 routers at a projected cost of approximately $3000 per router, or a total of $27,000.

- We will also need to procure 4 additional switches to support CENT 240 and CENT 345. The estimated cost for 4 additional switches is $14,000.

Inclusion of course SLOs in course syllabi

- All of our faculty include the course student learning outcomes in their course syllabi. We ensure that all faculty are reminded of the requirement to do this through regular department meetings.
As our instructors developed the original course student learning outcomes, they have their own copies of the course outlines that include student learning outcomes. For new instructors, we provide a copy of current course outlines from our files that include the student learning outcomes, so they know the expected content for the course and the established student learning outcomes for the course. Instructors may add additional outcomes to their course syllabi, if they wish to augment the student learning outcomes stated for the course.

Additionally, this year we have established a department Laulima web site and are currently in the process of migrating curriculum related files, including course outlines and SLOs to this central repository, which is accessible to all members of the CENT program.

**Safety and facilities issues**

- We are not aware of any outstanding safety issues.
- We currently have a problem with subterranean termites in Building 20, which the Vice Chancellor for Administrative Services is aware of.

**Part III: Action Plan**

**Tasks/goals from previous action plan items on last year’s annual review report**

- Planned tasks and goals for Fall 2008/Spring 2009 academic year included:
  - *Introduction of the new CENT 280 Database Systems I course.* David Pai is responsible for developing, teaching, and maintaining this course. This course is scheduled to be taught as an experimental course (CENT 297E) in Spring 2008 and as CENT 280 in Fall 2008.
    
    Status. CENT 297E was taught as an experimental course in Spring 2008. Because of Dave's move to UHWO, the first official offering of CENT 280 has been deferred to Fall 2009 when we expect it to be taught by ICS faculty.
  
  - *Introduction of the new CENT 285 Introduction to Internet Applications/Web Applications course.* David Pai is responsible for developing, teaching, and maintaining this course. This course is tentatively expected to be offered in Spring 2009.
    
    Status. Because of Dave's move to UHWO, the first official offering of CENT 280 has been deferred to Fall 2009 when we expect it to be taught by ICS faculty.
  
  - *Introduction of the new BAS 410 Project Management course as part of the B.A.S. in CENT program at UH West Oahu.* David Pai is responsible for developing, teaching and maintaining this course. This course is tentatively expected to be offered for the first time in Fall 2008 or Spring 2009.
    
    Status. Because of Dave's move to UHWO, the first official offering of CENT 280 has been deferred to Spring 2010 when we expect it to be taught by ICS faculty.
Realign teaching assignments for CENT 131 Hardware I and CENT 232 PC Desktop and Printer Support pursuant to departure of Paul Jacoby. Michael Castell will assume responsibility for developing, teaching, and maintaining these courses starting Fall 2008. He is currently preparing to teach these courses this year.

Status. Mike Castell has assumed responsibility for these courses and is currently teaching CENT 131 Hardware I for the first time. We are not currently planning to offer CENT 232 again in the near future, since Mike has other higher priority courses to work on at this time.

Update/realign content of CENT 140 Networking I to match updated Cisco networking curriculum content for the new Exploration 1 and 2 courses. Sally Dunan will start this process in Spring 2008 and continue the process of updating and realigning the course content during Fall 2008 and Spring 2009 semesters.

Status. Sally is currently updating the content of CENT 140 to match the updated Cisco networking curriculum, which has been proceeding smoothly.

Prepare to teach the CENT 245 course, based on the Cisco CCNP 3 Multilayer Switching course, within the A.P.C. program curriculum. Sally Dunan will use Perkins mini-grant funds to procure the switches required to support the curriculum, then self-study the CCNP 3 during the Spring/Summer 2008 to prepare to teach the course. She will participate in the CCNP 3 Instructor training course offered by PCATT during Summer 2008, or when it is next offered.

Status. We have obtained the switches for which we had funding and are already using those switches in our Cisco CCNA networking courses. Preparation to teach the advanced switching course CENT 245 has been deferred pursuant to the departure of two CENT faculty members, which has resulted in a change in short-term department priorities.

Update/realign content of CENT 240 Networking II to match updated Cisco networking curriculum content for the Exploration 3 and 4 courses. Mike Castell will be responsible for updating the second networking course during the 2008/2009 academic year.

Status. Mike Castell will teach CENT 240 Networking II during Spring 2009 and will work on updating the course content at that time. CENT 240 was not offered during Fall 2008.

The CENT program is currently evaluating the Advanced Professional Certificate program for compliance and certification with the Committee on National Security Systems (CNSS) standards for the Government Information Assurance Occupations listed below. Aaron Tanaka has been reviewing the prescribed standards and will work with Bill Becker and Sally Dunan to develop the application during the upcoming year (Spring 2008 – Spring 2009).

- NSTISSI-4011, National Training Standard for Information Systems Security (INFOSEC) Professionals*

*NSTISSI-4011 has been updated to NSTISSI-4011A.
NSTISSI-4013, National Information Assurance Training Standard For System Administrators (SA)*

Status. Sally Dunan has created a preliminary format for mapping the security-related content of existing CENT courses to the CNSS standards for certification. Aaron Tanaka and Sally will work together on completing the mapping and application process during Spring 2009 semester.

Other projected goals include developing curriculum proposals for the following new courses:

- CENT 360 Network Security II. Aaron Tanaka (Fall 2008/Spring 2009).
- CENT 351 UNIX/Linux System Administration II. Sally Dunan (Fall 2008/Spring 2009).
- CENT 235 IP Communications. Michael Castell (Fall 2008/Spring 2009).

Status. These projects will be deferred to the 2009-2010 academic year, as we have not had time this year to follow up on these projects. See discussion below regarding future tasks.

Additional tasks/goals for the Fall 2008 / Spring 2009 academic year have included:

- Curriculum updates
  - We have prepared and submitted a curriculum update package including the following course and program modifications to take effect in the Fall 2009 semester:
    - Modify CENT 110 from a 3 credit to 4 credit lecture only course. This is the result of discussion with the ICS department regarding the impact of removing ICS 102 from the CENT A.S. degree as an elective. The proposed change will augment CENT 110 Introduction to Information Systems with essential concepts from ICS 102 that will better prepare students for the new CENT 285 course. The augmented CENT 110 course is planned to be offered starting in Fall 2009. CENT 285 will be offered starting in Spring 2010.
    - Modify CENT 280 and CENT 285 from 4 credit lecture/lab courses to 4 credit lecture only courses. This modification will provide better workload scheduling for ICS faculty who are expected to teach these courses.
    - Create a new CENT 228 System Administration and TCP/IP Networking course, which will replace CENT 227 TCP/IP Networking and CENT 254 UNIX/Linux System Administration courses within the CENT A.S. degree program. This change will alleviate persistent scheduling conflicts between these courses and allow us to restore CENT 231 Data Communications as a core course within the CENT A.S. curriculum.
    - Restore CENT 231 Data Communications as a core course within the CENT A.S. curriculum.
    - Update the CENT A.P.C. program to reference the new CENT 228 course as an example of a course that meets the requirement for a course in TCP/IP networking and UNIX.
Map course SLOs to Program Learning Outcomes and General Education Learning Outcomes. This tasking is being performed to comply with current assessment and accreditation standards.

Course updates:

- Aaron Tanaka is currently updating CENT 130 Microcomputer Operating Systems course to incorporate Vista as the primary operating system used, instead of Windows XP.
- Sally Dunan has been updating CENT 253 to use OpenSUSE 11.0, instead of Novell SUSE Linux 10.0 during Fall 2008.
- Aaron Tanaka has been teaching CENT 315 Network Management for the first time during Fall 2008. This course was previously taught by Bill Becker.

Future Tasks/goals for 2009/2010 academic year and beyond

- Network and Telecommunications Certificate of Achievement
  - Submit Authorization to Plan (ATP) request for planning a new program. Projected completion date is December 2008. Aaron Tanaka and Sally Dunan will cooperate on this item.
  - Establish and meet with focused Advisory Committee including major telecommunications providers on the island of Oahu. Mike Castell and Aaron Tanaka will initiate this during Spring 2009.
  - Research/validate curriculum requirements for proposed Networking and Telecommunications Certificate of Achievement. Mike Castell/Aaron Tanaka will work on this during Spring/Summer 2009.
  - Research/validate equipment requirements for proposed telecommunications courses in the Networking and Telecommunications Certificate of Achievement. Mike Castell will work on this during Spring/Summer 2009, pursuant to the planned meeting with focused advisory committee.
  - Research/validate requirements for additional networking equipment for networking courses. Sally Dunan will research this during Spring 2009.
  - If supported by preliminary research, submit follow-on proposal for Perkins grant funding for additional networking and telecommunications equipment. This will be completed by Mike Castell and Sally Dunan during Spring/Summer 2009.
  - Develop curriculum proposal for Networking and Telecommunications Certificate of Achievement. This is expected to be completed during Fall 2009 semester with participation of Mike Castell, Aaron Tanaka, and Sally Dunan.
○ Develop curriculum proposal for a new CENT 331 IP Telecommunications course. This is expected to be done during Fall 2009, following completion of research into curriculum for telecommunications, by Mike Castell.

○ Teach a pilot course for the propose CENT 331 IP Telecommunications courses. Mike Castell is projected to teach a pilot course during Spring or Fall 2010.

• Other curriculum actions

○ Create a new elective CENT 360 Network Security II course, based on Cisco specific material from the existing CENT 310 Network Security I. The curriculum proposal is projected to be completed during Fall 2009 by Aaron Tanaka.

○ Revise course outline for existing CENT 310 Network Security I to address a more basic range of network security topics that are vendor neutral, as is appropriate for a core course within the A.P.C. and B.A.S. programs. The curriculum proposal is projected to be completed during Fall 2009 by Aaron Tanaka.

Part IV: Resource Implications (physical, human, financial)

• Budgetary impacts for carrying out this action plan

○ Network and Telecommunications Certificate of Achievement

  ○ An updated equipment list identifying equipment items that were procured based on Academic Year 2007-2008 funding, an updated equipment list for items currently being procured based on Perkins grant funding, and additional equipment items we still need to procure has been attached at the end of this report.

  ○ The remaining items currently on the active equipment list are related to the proposed Certificate of Achievement in Networking and Telecommunications.

    ▪ All equipment related to the Cisco Networking equipment is validated by the Cisco equipment specifications to support the current version of the Cisco Networking Academy program.

    ▪ The remaining equipment is anticipated to support curriculum development for a new course in IP Communications as part of the Networking and Telecommunications Certificate of Achievement. Part of this equipment is also specified/validated by Cisco. Other items need to be validated by the curriculum/equipment research for the Telecommunications part of the proposed Certificate of Achievement.

  ○ We will request Perkins grant funding to procure the additional telecommunications and networking equipment identified as a result of our curriculum and equipment research.

  ○ As we might not be able to obtain additional Perkins grant funding for all of the equipment we would like to have, we might also need to request campus funding to meet our identified equipment shortfalls. The only item on our list for funding and
procurement currently identified as an equipment shortfall is the additional routers to support the CENT 140, 240 and 340 courses.

- No budgetary impacts are anticipated for the proposed curriculum development (curriculum modifications), as we expect the curriculum proposals to be developed as part of the normal workload.

- Do any of your action plan items require integration into the strategic plan? (If so, have you notified your division chair / Dean of this action?)

- None of our action items needs to be integrated into the Strategic Plan, other than for possible campus level funding.

Part V: Strategic Planning Items

- Does your program have any funding requests on the current strategic plan (equipment, positions, etc.)? If yes, please write an explanation on how your program review report supports the need to fund the program’s strategic plan request.

- We currently have no funding requests on the Strategic Plan.
### CENT Equipment List - Completed Items for 2007-2008

**Program/Faculty Liaison: Sally Dunan**

<table>
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<tr>
<th>Ranking</th>
<th>Pri</th>
<th>QTY</th>
<th>Description</th>
<th>unit $</th>
<th>total $</th>
<th>Intended use</th>
<th>Validation of Requirement?</th>
<th>How addressed by Program Review?</th>
<th>Current Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>3</td>
<td>1</td>
<td>Mini-tower classroom server</td>
<td>5,300</td>
<td>5,300</td>
<td>High-performance dual core 2.33 GHz mini-tower configuration classroom server with 16 GB memory to improve support for advanced CENT networking, system administration and security courses (AS/APC) for use as a classroom VMWare server</td>
<td>VI. Analysis of Data. Maintain up-to-date classroom computer labs. VIII. Action Plan. CENT 360</td>
<td>Completed. Funded via EOY funds. Equipment procured.</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>2</td>
<td>4</td>
<td>Telecom Patch Panels</td>
<td>2,500</td>
<td>10,000</td>
<td>Improved support for CENT 231 (Data Telecommunication).</td>
<td>VII: Analysis of Data. Maintain up-to-date equipment to support technology courses.</td>
<td>Completed. Funded via EOY funds. Equipment procured.</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>2</td>
<td>2</td>
<td>CISCO VoIP bundles</td>
<td>11,000</td>
<td>22,000</td>
<td>To support development/delivery of CENT 235 IP Communications course for Voice Over IP. Used by Cisco Networking curriculum (CCNA/CCNP) for VoIP. CENT 331 Development</td>
<td>VII: Analysis of Data. Need to update technology and expand courses offered. VIII. Action Plan. CENT 235</td>
<td>Completed. Equipment received from PCATT grant for 2007-2008.</td>
<td></td>
</tr>
</tbody>
</table>
### Updated CENT Equipment List for 2008-2009

**Program/Faculty Liaison:** Sally Dunan

<table>
<thead>
<tr>
<th>Current Ranking</th>
<th>Pri</th>
<th>QTY</th>
<th>Description</th>
<th>unit $</th>
<th>total $</th>
<th>Intended use</th>
<th>Validation of Requirement</th>
<th>How addressed by Program Review?</th>
<th>Current Status</th>
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</thead>
<tbody>
<tr>
<td>Funded</td>
<td>1</td>
<td>2</td>
<td>CCNP 5.0 Modular Router Bundle (incl 3 yr smartnet)</td>
<td>10,500</td>
<td>21,000</td>
<td>Each bundle includes 1 2811 and 3 1841 routers to support Cisco networking courses. Can also be used to support telecomm and network security courses.</td>
<td>Supports Cisco Networking curriculum (CCNA/CCNP), Supports CENT 140, 240, 340.</td>
<td>III. Action Plan. IV. Resource Implications</td>
<td>Perkins grant funding used to procure 6 Cisco 2811 routers to support CENT 140, 240, 340 courses. Waiting receipt of routers.</td>
</tr>
<tr>
<td>Funded</td>
<td>2</td>
<td>1</td>
<td>Telecom Switch</td>
<td>25,000</td>
<td>25,000</td>
<td>Improved support for CENT 231 (Data Telecommunication).</td>
<td></td>
<td>III. Action Plan. IV. Resource Implications</td>
<td>Perkins Grant Funding Received. Research in progress.</td>
</tr>
<tr>
<td>1</td>
<td>1</td>
<td>3</td>
<td>CCNP 5.0 Standard Router Bundle (incl 1 yr smartnet)</td>
<td>12,000</td>
<td>36,000</td>
<td>Each bundle includes 4 2811 routers and related components to support Cisco networking courses. Can also be used to support telecomm and network security courses.</td>
<td>Needed for Cisco Networking curriculum (CCNA/CCNP), Supports CENT 140, 240, 340</td>
<td>III. Action Plan. IV. Resource Implications</td>
<td>New request for 2008-2009. Clears a deficiency. Perkins grant funding will be requested.</td>
</tr>
<tr>
<td>2</td>
<td>2</td>
<td>3</td>
<td>CISCO VoIP bundles</td>
<td>11,000</td>
<td>33,000</td>
<td>To support development/delivery of CENT 331 IP Communications course for Voice Over IP.</td>
<td>Supports Cisco Networking curriculum (CCNA/CCNP) for VoIP. CENT 331 Development.</td>
<td>III. Action Plan. IV. Resource Implications</td>
<td>Request carried over from 2007-2008. Perkins grant funding will be requested.</td>
</tr>
<tr>
<td>3</td>
<td>2</td>
<td>4</td>
<td>Cisco 3560-24PS EMI switches</td>
<td>3,500</td>
<td>14,000</td>
<td>Supports layer-3 switching to support CCNP 3 (CENT 345) curriculum. Can also be used to support CENT 140, 240, 231, and network security courses.</td>
<td>Supports Cisco Networking curriculum (CCNA/CCNP), Supports CENT 240/345.</td>
<td>III. Action Plan. IV. Resource Implications</td>
<td>Request carried over from 2007-2008. Perkins grant funding will be requested.</td>
</tr>
<tr>
<td>4</td>
<td>3</td>
<td>1</td>
<td>MAX-GA card for AX 4000</td>
<td>16,000</td>
<td>16,000</td>
<td>Improved support for CENT 231 Data Telecommunication &amp; proposed new course IP Communication.</td>
<td></td>
<td>III. Action Plan. IV. Resource Implications</td>
<td>Pending review of Spirent donation.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>AX4000 w/telecom cards</td>
<td>100,000</td>
<td>100,000</td>
<td>Improved support for CENT231 Data Telecommunication &amp; proposed new course IP Communication. Currently have one card and want to obtain additional cards to reduce student/equipment ratio.</td>
<td>III. Action Plan. IV. Resource Implications</td>
<td>Pending validation through curriculum research. Perkins grant funding will be requested.</td>
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<td></td>
</tr>
<tr>
<td>5</td>
<td>3</td>
<td>1</td>
<td>AX4000 w/telecom cards</td>
<td>100,000</td>
<td></td>
<td>Summarizes progress and goals for the Fall 2007-Spring 2008 Semesters, highlighting new courses, equipment needs, and funding requirements.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>3</td>
<td>3</td>
<td>AX4000 w/telecom cards</td>
<td>100,000</td>
<td>300,000</td>
<td>Summarizes progress and goals for the Fall 2007-Spring 2008 Semesters, highlighting new courses, equipment needs, and funding requirements.</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>