AUTHORIZATION TO PLAN (ATP) AN ACADEMIC PROGRAM (Revised 06/12/07)

Please complete all sections with an emphasis on items 7, 8, 9 and 10. The ATP is not to exceed 5 pages.

1. School/College and Department/Unit:
   Windward Community College, Mathematics/Business Dept.

2. Chair/Convener of Planning Committee:
   Laura Sue

3. Program Category: **X New **Modified ____Interdisciplinary____

4. a. Degree or Certificate Proposed:
   Associate in Arts in Information and Computer Science

   b. List similar degrees or certificates offered in UH System:
   No other campuses have an Associate of Arts degree in Information and Computer Science.
   Kapiolani CC and Leeward CC have Associate in Science Natural Science, concentration in Pre-Computer Science

5. Planning
   a. Planning period (not to exceed one year or reapplication is necessary)
      Fall 2014-Spring 2015

   b. Activities to be undertaken during the planning phase
      • Research what general education courses should be included in program
      • Development of any additional courses needed
      • Development of program sheets and student pathways
      • Develop strategies for student recruitment and retention
      • Solicit community input and support
      • Completion of program proposal

   c. Submission date of program proposal
      Spring 2014

   d. Workload/budget implications during planning period
      None

6. Program Description (Objectives and relationship to campus mission and strategic plan)
   The AA in Information and Computer Sciences primarily packages existing courses into a degree program. It will allow students to earn an associate’s degree in Computer Science and also to prepare to transfer to UH Manoa or other 4 year programs. Students will take all the required 100 and 200 level ICS courses as well as General Education courses and will be able to transfer into
either the BA in Information and Computer Sciences or BS in Computer Science programs at UH Manoa.

Program outcomes (adapted from current AA in liberal arts outcomes):

- Global and Cultural Awareness: Develop the ability to perceive how people interact with their cultural and natural environments, through their own worldview and through the worldviews of others, in order to analyze how individuals and groups function in local and global contexts.
- Critical Thinking and Creativity: Make judgments, solve problems, and reach decisions using analytical, critical, and creative thinking skills and develop solutions by utilizing information technology skills.
- Communication: Use written, visual, and oral communication to discover, develop, and communicate meaning, and to respond respectfully to the ideas of others in multiple environments.
- Information Literacy: Identify information needed in a variety of situations, and access, evaluate, and use relevant information effectively and responsibly.

This A.A. degree program specifically relates to Windward Community College Action Outcomes 2.8, 4.1, 4.3, 4.5, and 4.8, as explained below.

2.8 Increase the diversity and number of programs offered to or in underserved regions by increasing the number and types of programs offered by at least one per two-year period.

This is a new type of program for WCC and would increase the diversity of our offerings.

4.1 Contribute to the development of a high-skilled, high-wage workforce through the establishment of at least one new specific, career-focused degree, certificate or career pathway per year that leads to employment in emerging fields (innovative, knowledge-intensive – DBEDT fields, including life sciences, health and wellness, information technology, film and digital media, alternative energy, ocean and marine science, earth and space sciences, astronomy, diversified agriculture, and dual-use (military/civilian) technology.

This is a 2 year degree pathway leads to further study and employment in the emerging field of information technology.

4.3 Expand the curriculum that prepares students for nursing, social work, information technology, and other critical workforce shortage areas by adding at least one new course per year.

This will expand our curriculum in information technology, by adding a new program of study and related course work.

4.5 Promote the knowledge, skills, and opportunities that support current and emerging STEM fields and careers by increasing credit and noncredit STEM course enrollments by 3% per year.

This A.A. degree promotes knowledge, skills and opportunities specific to Technology (STEM) fields and careers. It is predicted to correlate positively not only with increased initial enrollments but also persistence through to degree completion, raising enrollments in courses associated with the degree.
4.8. Increase the number of degrees and certificates awarded in Science, Technology, Engineering, and Math (STEM) fields. (includes both credit and noncredit) by 3% per year.

By providing a new career path in STEM in the emerging and already dominant field of Computer Science, this A.A. degree program should increase the number of degrees and certificates awarded in STEM.

The A.A. in Information & Computer Science ties to the WCC mission statement by offering an innovative program in arts and sciences which leads to a highly desirable career pathway. It works to serve the needs of the Koʻolau communities in providing career learning.

7. Program Justification (Needs and Rationale. Include, as appropriate, internal and external factors driving need for this program; description of needs assessment; number of interested student per year; need for such a program in relation to workforce development, graduate studies, etc.)

The AA in Information and Computer Sciences allows students to begin learning about Computer Science and then continue their education at a 4-year university, such as UH Mānoa. The Computer Science field is growing in our local communities and is in need of qualified, capable employees. A direct path from WCC to a 4-year degree will help get more students started in Computer Science, encouraging students to go into STEM fields.

Nationally the need for software developers is expected to grow 22% between 2012 to 2022 with wages as shown below:

<table>
<thead>
<tr>
<th>Software Developers</th>
<th>Hourly Wages</th>
<th>Yearly Salary</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Low</td>
<td>Medium</td>
</tr>
<tr>
<td>Hawaii</td>
<td>$23.96</td>
<td>$36.75</td>
</tr>
<tr>
<td>US</td>
<td>$26.81</td>
<td>$44.55</td>
</tr>
</tbody>
</table>

Table 1. Hourly wages & Yearly Salary.


Computing is a growing area in which more workers are needed. According to a June 2, 2014, article in Forbes, Information Technology (IT) workers were among the “top ten hardest jobs to fill.” Information in the article was obtained from ManpowerGroup’s Talent Shortage Survey [Dill, K. (2014, June 2). The 10 Hardest Jobs To Fill In 2014. Retrieved from Forbes: http://www.forbes.com/sites/kathryndill/2014/06/02/the-10-hardest-jobs-to-fill-in-2014/]

Enrollment in ICS courses at WCC has continued to grow over the past 5 years. Clearly, students are interested in the ICS courses, and providing a degree program will help these students continue to build career skills and also move on to a 4-year program. Windward Community College offers many of the courses that would be required including ICS111, ICS211, ICS141, which have shown a growth rate of 210% over 5 years (as shown below). We will also recent approval for ICS241, ICS212, and ICS215 which will begin offering in the next academic year.
8. Description of resources required
   a. Faculty (existing and new FTEs)
      We currently have 1.0 position in ICS and one 0.5 position which is scheduled to end July 2015 and several lecturers. We would be able to facilitate the teaching of the classes with the current staff; however, with the anticipated elimination of our 0.5 position, an additional 1.0 position in Computer Science or a related field will be necessary. Teaching equivalencies to co-ordinate the program for one of the positions

   b. Library resources (including an evaluation of current resources and an estimate of the cost of additional resources required)
      Current library resources are sufficient for our needs which include access to academic databases, periodical indexes such as EBSCO, and other such resources

   c. Physical resources (space, equipment, etc.)
      Initially, no new physical resources will be required. Our existing computer classrooms are sufficient to cover the needs of our ICS courses in terms of course scheduling. We intend to offer a number of sections for the ICS courses for this degree through distance learning.

As the program grows we may need additional lab space, office space.

   d. Other resources required (staff, graduate assistantships, etc.)
      Supplemental instruction would be desired to support student success.

9. Five-Year Business Plan. Provide a five-year projected budget for the program that includes:
   a. Annual costs to implement the program
      The main cost to implement the program would be for teaching equivalencies for a coordinator for the program, since the courses are already being taught. Two-credits teaching equivalency is requested for this program.

   b. Projected enrollment and estimated tuition revenue
      See item f. below

   c. How will be program be funded?
      General tuition income and possible grants

   d. Does the current or proposed budget (Department/College/Campus) include funds or a request for funds for the proposed program? Please provide details.
      For the most part, this is a repackaging of current course offerings and little or no additional costs are anticipated.
e. Given a “flat budget” situation, how will the proposed program be funded?
   Student tuition

f. **Mini Cost Revenue Template**

<table>
<thead>
<tr>
<th>ENTER VALUES IN HIGHLIGHTED CELLS ONLY</th>
</tr>
</thead>
<tbody>
<tr>
<td>YEAR</td>
</tr>
<tr>
<td>PROGRAM COSTS</td>
</tr>
<tr>
<td>Faculty w/o fringe*</td>
</tr>
<tr>
<td>Other personnel costs w/o fringe</td>
</tr>
<tr>
<td>Library</td>
</tr>
<tr>
<td>Equipment/Supplies</td>
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<tr>
<td>Other</td>
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<tr>
<td><strong>TOTAL Expenses</strong></td>
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<table>
<thead>
<tr>
<th>REVENUES</th>
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<tr>
<td>No. of Courses</td>
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<td>12</td>
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</tr>
<tr>
<td>No. of Credits</td>
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<td>SSH</td>
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<tr>
<td>Tuition Rate/Credit**</td>
<td>$114</td>
<td>$114</td>
<td>$114</td>
<td>$114</td>
<td>$114</td>
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<tr>
<td><strong>Total Revenue from Tuition</strong></td>
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<td>$90,288</td>
<td>$90,288</td>
<td>$90,288</td>
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<tr>
<td>Other Sources of Income</td>
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<td></td>
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<td></td>
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</tr>
<tr>
<td><strong>TOTAL Revenues</strong></td>
<td>$90,288</td>
<td>$90,288</td>
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<td>$90,288</td>
<td>$90,288</td>
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*Assuming a 4% increase in faculty pay. Faculty pay is based on Rank 2 instructor. Teaching 36 credits with 3 credits teaching equivalency for coordinating the program. 1.5 FTE

**Assuming no increase in tuition

10. **Impact on current courses or programs.**
The impact could show an increased enrollment in current ICS courses and possible need for additional sections. This may decrease the number of students earning a liberal arts degree, which students interested in computer science would currently earn. This program could possible bring new students to our campus and increase enrollment in General Education courses.

11. **If this program is multidisciplinary, provide evidence of commitment for support from the colleges, departments, programs, and/or individuals expected to participate.**
   -currently ongoing-
Reviewed by: (The ATP has completed the campus approval process prior to review by Council of Chief Academic Officers)

**Campus Chief Academic Officer:**
Comments and Recommendations:

<table>
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<tr>
<th>Print Name</th>
<th>Signature</th>
<th>Date</th>
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**Council of Chief Academic Officers (Systemwide Consultation):**
Comments/Recommendations:

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<tr>
<th>Print Name</th>
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<th>Date</th>
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**Chancellor:** Approved  Disapproved

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<th>Date</th>
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</table>

*(Final signed copy is provided to the Vice President of Academic Planning and Policy for Program Action Report)*

Review of ATP Proposals at Windward Community College

New Program Proposal:

New Program Proposal levels of review done prior to or concurrent with the ATP submission for off-campus review.

1. Proposer

   **Laura Sue**  **Laura Sue**

   Signature:  **Sept. 30, 2014**

2. Department Area (more than one departmental instructor’s signature required)

   **Vanessa Cole**  **Vanessa Cole**

   Signature:  **9/30/2014**

   **Jody-Lynn Storm**  **Jody-Lynn Storm**

   Signature:  **10/2/2014**

   **Jean Okumura**  **Jean Okumura**

   Signature:  **10/2/2014**
3. Department
   ___________________________ 10/2/14
   ____________  
   Department Chairperson   Date

4. Division
   ___________________________ 10/2/14
   ____________  
   Dean of Instruction   Date

5. Curriculum Committee Review
   _ Approved  ____________
   Reason:____________________
   ___________________________ 10/28/14
   ____________  
   Curriculum Committee Chairperson   Date

6. Faculty Senate Review
   _ Approved  ____________
   Reason:____________________
   ___________________________ 11/6/14
   ____________  
   Faculty Senate Chairperson   Date

7. Vice Chancellor for Instruction
   _ Approved  ____________
   Reason:____________________
   ___________________________ 11/9/14
   ____________  
   Vice Chancellor for Instruction   Date

8. Chancellor
   _ Approved  ____________
   Reason:____________________
   ___________________________ 11/24/14
   ____________  
   Chancellor   Date