Authorization to Plan (ATP) a New Academic Program
Associate in Applied Science (AAS) and Certificate of Achievement (CA) in Facilities Engineering Technology

1. Vice Chancellor for Academic Affairs James Dire was consulted by proposer.

2. **Campus, College, and Division requesting the ATP:**
   Kaua‘i Community College (KCC), Trades Technology Division

3. **Planning Committee:**
   Chair, Justin Carvalho, Program Coordinator, Facilities Engineering Technology
   Glenn Alquiza, Division Chair, Trades Technology Division
   Gordon Talbo, Automotive Technology
   Daryl Gerardo, APT Educational Specialist, Automotive Mechanics Technology
   John Constantino, Trade Technology Counselor

4. **Proposed Program:**
   Associate in Applied Science and Certificate of Achievement in Facilities Engineering Technology

5. **Description of Need for the Program:**
   The purpose of the Associate in Applied Science and Certificate of Achievement in Facilities Engineering Technology (FENG) program will prepare individuals for employment in jobs requiring multiple maintenance competencies. With tourism bringing in over $10 billion dollars to Hawaii’s economy, the need for skilled workers to maintain these vacation hot spots has never been higher.

   The Associate in Applied Science and Certificate of Achievement in Facilities Engineering Technology will address the needs of the hotel and condominium industries as well as many other industries in Hawaii. The courses of study will expose students to a wide range different trade skills that will help keep them interested in facilities maintenance or may steer them into more specialized training according to their interest and strengths.

   Our Facilities Engineering Technology (FENG) program must keep pace with technology and train students on industry standards. To prepare students for entry-level positions in the field of facilities maintenance students will learn safety and the laws created by the Occupational Safety and Health Administration (OSHA) and Hawaii Occupational Safety and Health (HIOSH) regulations to minimize risk, protect self, and limit liability issues for current and future employers.

   a. **PROGRAM DESCRIPTION:**

      The Facilities Engineering Technology (FENG) program will prepare individuals for employment in jobs requiring multiple maintenance competencies. These competencies will allow graduates to obtain general maintenance positions in a variety of industries. Graduates will have gained knowledge in electrical applications and practices; refrigeration and air conditioning systems; basic plumbing installation and repair; and drywall, painting, and construction methods.
OSHA and HIOSH regulations are taught throughout the curriculum. An emphasis will be placed on incorporating the new technologies and materials approved by the Leadership in Energy and Environmental Design (LEED) rating systems for the design, construction, operation, and maintenance of green buildings, and homes. LEED is intended to help building owners and operators be environmentally responsible and use resources efficiently.

The goals of the program are to prepare the student with the skills and competencies necessary for a successful career as a facility maintenance technician, to instill in the student the work habits and attitude necessary to work in a highly competitive field, and to provide the student with the basic skills necessary to become a lifelong learner in order to keep abreast of the latest technological changes and industry updates.

1) **Program Learning Outcomes:**

- Read and understand blueprints sufficiently to use them to plan a project.
- Select materials properly for a given project.
- Maintain and care for the tools required in the construction and maintenance industry.
- Know and utilize Occupational Safety and Health Administration (OSHA) and State safety regulations to minimize risk and protect self and others.
- Communicate successfully in writing, orally, and with computer technology.
- Understand proper mechanical, electrical, and carpentry codes and standards applicable to construction and repair.
- Understand and demonstrate the craftsmanship standards of dependability, punctuality, and quality.

2) **Justification:**

The strength of the American economy is inextricably linked to the strength of America’s education system. Particularly in times of economic challenge, American employers need a workforce that is skilled, adaptable, creative, and equipped for success in the global marketplace. When President Obama released his proposed budget for FY14, he included a number of proposals that would affect Career Technical Education (CTE). The FY14 budget proposal called for a $71.2 billion investment in the Department of Education, a 4.5 percent or $3.1 billion increase over the FY13 pre-sequester level.

Below are key elements of the budget proposal that would impact CTE:

**$1.1 Billion for Perkins:** The budget calls for adoption of the administration’s Investing in America’s Future: A Blueprint for Transforming Career and Technical Education that was introduced in April 2013 and to return Carl D. Perkins Career Technical Education Act (Perkins) state grant funding to FY13 pre-sequester levels or $1.123 billion. National Programs are recommended for a $10 million increase to $17.8 million.

http://blog.careertech.org/?p=8347

According to Kevin Flemming’s Success in the New Economy video, the ration of jobs requiring a masters or higher, to bachelors degrees, to certificate or technical degrees is 1:2:7. That means that 7 out of 10 jobs has been and will continue to require some form of technical training. According to the Bureau of Labor Statistics, Employment of general maintenance and repair workers is projected to grow 9 percent from 2012 to 2022, about as fast as the average for all occupations.
3) **Impact on campus, island and or/state’s economic development:**
General Maintenance and Repair Works otherwise know as Facility Maintenance workers made it to the Kauai County’s Hot 20 Demand Occupations list. [https://www.hiwi.org/admin/gsipub/htmlarea/uploads/Hot20DemandOccs_2010-2020-KauCty.pdf](https://www.hiwi.org/admin/gsipub/htmlarea/uploads/Hot20DemandOccs_2010-2020-KauCty.pdf)


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<tbody>
<tr>
<td>Repair and Maintenance</td>
<td>3,640</td>
<td>4,250</td>
<td>610</td>
<td>1.7%</td>
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<tr>
<td>Total, All Occupations</td>
<td>664,770</td>
<td>729,470</td>
<td>64,690</td>
<td>1.0%</td>
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</table>

**How the program addresses workforce needs:**

Looking at national projections, Maintenance and Repair workers are expected to increase by 9.4 percent between 2012 and 2020. Statistics by the U.S. Bureau of Labor projected the increase listed below: See [http://www.bls.gov/emp/ep_table_102.htm](http://www.bls.gov/emp/ep_table_102.htm)

**Employment projections data for Maintenance and Repair Workers, 2012-20**

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<tbody>
<tr>
<td>Automotive Service Technicians and Mechanics</td>
<td>49-9071</td>
<td>1,325,100</td>
<td>1,450,300</td>
<td>9.4</td>
<td>125,200</td>
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</table>

4) **How the program aligns with system and campus mission and strategic plan outcomes:**
The proposed program is in line with all of the UHCC system and Kauai Community College mission and strategic plans. For example, the UH Community College system strategic plan
aims to develop a globally competitive workforce by increasing awarded degrees and/or transfers to UH baccalaureate programs by 3% per year in fields where the average wage is at or above U.S. average, and/or where there is a shortage of qualified workers in Hawaii. This goal also aims to increase the degrees and certificates awarded in Science, Technology, and Math (STEM) fields by 6%. (Goal B: Function as a Seamless State System).

An additional goal of the UHCC system strategic plan is the economic contribution to the state’s economy as well as the economic return on investment in education (Goal C: Promote Workforce and Employment).

The Kauai Community College mission is focused on providing “practical and theoretical learning,” “intellectual pursuits which foster the ability to analyze problems, think critically, and communicate ideas effectively,” which maximize the use of technology for global reach and adaptability to change,” and “develop partnerships between the campus, community, UH system, state, national, and global organizations.” The Facilities Engineering Program offers courses and options for students that may never have decided to attend college. Giving them this option opens the doors to other academic opportunities on our campus and throughout the UH system.

b. Can identified need be met by existing UH program(s)?

1) List similar degrees or certificates offered in UH System
Hawaii CC, Honolulu CC, and UH Maui college offer courses and Certificates of Achievement (CA) in related areas such as: Welding, Basic Carpentry Skills, Basic Drafting Skills, Electrical Maintenance, Maintenance Painting, Maintenance Plumbing, and Rough and Finish Carpentry. Currently no other program offers an Associate in Applied Science or Certificate of Achievement in Facilities Maintenance Technology. Collaboration with other campuses in the system is on-going to meet the challenges of preparing students for new and upcoming technologies.

The closest match to this program proposal would be the technical courses offered at Honolulu CC and UH Maui. Honolulu CC offers an apprenticeship in Building Maintenance and Maui CC has Certificates of Achievement in: Basic Carpentry Skills, Basic Drafting Skills, Electrical Maintenance, Maintenance Painting, Maintenance Plumbing, and Rough and Finish Carpentry.

2) Describe the impact of the proposed program on current courses or programs at the campus and within the system.
Currently a 23 credit-hour Certificate of Competence (CO) in Facility Engineering Technology is offered at Kauai Community College. The creation of an Associate in Applied Science (AAS) and a Certificate of Achievement (CA) in Facilities Engineering Technology at Kauai Community College would establish a model that other campuses could offer to their students. Hawaii CC, Honolulu CC, and UH Maui already offer the majority of the courses that make up the FENG AAS and CA.

3) If a similar program exists, consult with other campuses, identifying who and when.
No similar program in the system currently exists, however the majority of the courses that make up the FENG AAS and CA are offered at Hawaii CC, Honolulu CC, and UH Maui.
a) The VCAA of the other UH campuses with relevant programs by the VCAA of the campus proposing the degree/certificate.
VCAA James Dire consulted the other UHCC VCAAs and academic deans at the December 2014 UHCC Academic Affairs Administrators meeting.

b) Colleagues in related disciplines from other campuses have been consulted.
Colleagues in related disciplines from other campuses have been consulted. Past discussions have taken place between Hawaii CC, Honolulu CC, and UH Maui faculty. Continued collaboration needs to occur.

6. Planning the new program
a. Planning period
   1) Planning period (not to exceed two years or reapplication is necessary)
      The planning period will be from January 2015 to December 2015.

   2) Activities to be undertaken during the planning phase
      The following activities must be undertaken during the planning period: establish a Facilities Engineering Technology Advisory Committee, assess the curriculum for current and new FENG courses, submit curriculum action request for approval, develop new course offerings, develop program action request for new associate in applied science and certificate of achievement, collaborate with other campuses on curriculum and courses, hire lecturers, identify third party accreditation credentials to offer students, and develop a Program Change Request for new operating budget and faculty salary.

   3) Anticipated submission date of program proposal
      It is anticipated the proposal will be submitted during fall semester 2015.

   4) Workload/budget implications during planning period
      Program planning will be carried out by the Chair of the Planning Committee on assigned time. The funding of assigned time for planning by existing faculty will be kept to a minimum.

   5) How program will be economically sustainable
      The program will be run off the existing resources used to offer the Certificate of Competence in Facility Engineering Technology. Any additional requested will be requested through APRU funds and grants (e.g. Perkins).

   6) Impact proposed program may have on accreditation
      Accreditation will not be impacted. The program to be proposed is consistent with the colleges existing status in regards to accreditation.

   7) How program will fit within campus and/or system organizational structure
      The program will replace the existing FENG Certificate of Competence. It will also allow students who are interested in pursuing business or hotel management another option related to a field of their interest.

b. Description of resources required:
   1) Faculty
The required expertise comes predominately from existing Carpentry, Electrical Installation and Maintenance and Electronics faculty as well as lecturer for specialized trade not offered as a program at Kauai Community College.

2) **Library resources**
Current library resources in the UH system are sufficient.

3) **Physical resources**
The campus has a machine shop that is currently being renovated for this new HEV training program through the C3T federal grant. New equipment for this project is also funded by the C3T grant. The Carpentry building currently has three classrooms (with two computer labs). Class times will be coordinated to allow for current and future class offerings, so additional classes would not impact campus facility resources. Additional supplies, computer hardware and software may need to be purchased; however, this will be explored in the planning process.

4) **Other resources required**
None determined at this time.

c. **Three-Year Business Plan:**

<table>
<thead>
<tr>
<th>TABLE 1.1 Three Year Business Plan</th>
<th>2015-16</th>
<th>2016-17</th>
<th>2017-18</th>
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<td><strong>ACADEMIC YEAR</strong></td>
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<td><strong>PROGRAM COSTS</strong></td>
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<tr>
<td>Faculty w/o fringe</td>
<td>$41,302</td>
<td>$41,302</td>
<td>$41,302</td>
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<tr>
<td>Other personnel costs w/o fringe</td>
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<td></td>
<td></td>
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<tr>
<td>Library</td>
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<tr>
<td>Equipment/Supplies</td>
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<tr>
<td>Other</td>
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<tr>
<td>TOTAL Expenses</td>
<td>$41,302</td>
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<td><strong>REVENUES</strong></td>
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<tr>
<td>Projected Enrollment</td>
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<td>SSH</td>
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<td>Tuition Rate/Credit</td>
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<td>Total Revenue from Tuition</td>
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<td>Other Sources of Income</td>
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<td>TOTAL Revenues</td>
<td>$26,220</td>
<td>$33,672</td>
<td>$41,860</td>
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</tbody>
</table>

7. **Describe the impact on current courses or programs.**
The Associate in Applied Science and Certificate of Achievement in Facilities Engineering Technology will have a positive impact on enrollment for the Trades Division. This program will complement existing programs in the division as well as enhance the prospects for other CTE programs to develop entrepreneurial and managerial opportunities for their students. Additionally, new course development will cultivate opportunities for synergy among the CTE programs,
including local industries, and assist in building stronger pathways to four-year institutions.

8. Curriculum articulated at other UH campuses
   No other Facilities Engineering Technology degree or certificate currently exist at other campuses. Therefore no articulation agreements exist. However many of the trades courses do automatically articulate with other campuses.

9. This program is multidisciplinary
   Courses in this program included carpentry, drafting, blueprint reading, electrical, heating and air conditioning, refrigeration, and welding.
The ATP has completed the campus approval process prior to review by Council of Chief Academic Officers.

Reviewed by:

Campus Chief Academic Officer:  
✓ Recommend

Comments:

Signature  Print Name  Date

Chancellor

✓ Approved  Disapproved

Comments:

Signature  Print Name  Date

Council of Chief Academic Officers (System wide Consultation):

Comments:

Signature  Print Name  Date

(A copy of the signed document is provided to the Office of the Executive Vice President of Academic Affairs/Provost.)