TO: Erika Lacro  
Vice President for Community Colleges

FROM: Ron Umehira  
Dean of Career & Technical Education  
Leeward Community College

Harold Fujii/Associate Professor, Donna De Silva/Assistant Professor, & Jessica Yamamoto/Interim CTE Dean (Hawai‘i Community College), Guy Fo/Assistant Professor & Michael Jennings/Professor (Honolulu Community College)

DATE: March 12, 2021

SUBJECT: Cross-Campus Program Discussions & Recommendations - Architectural, Engineering and CAD Technologies (AEC) Program

___________________________________________________________________________

Description of Cross-campus Group Process

On March 4, 2021, Ron Umehira convened the AEC faculty and program coordinators from Honolulu Community College (HonCC) and Hawai‘i Community College (HawCC) in response to the UHCC Organizational and Resource Plan #3, January 26, 2021. Dean Umehira facilitated the discussion and started with the feedback of the faculty when they read the following proposed actions and next steps from the Plan #3 document.

<table>
<thead>
<tr>
<th>Proposed Actions</th>
<th>Next Steps</th>
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</thead>
<tbody>
<tr>
<td>HonCC will lead planning for AEC program to serve students statewide via distance and hybrid.</td>
<td>HonCC will plan for its AEC program to serve students statewide.</td>
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<tr>
<td>HawCC will review its AEC program.</td>
<td>HawCC will review its program and take action, as appropriate.</td>
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</table>

Faculty Feedback

HonCC

- To take the lead as a feeder to the UH – Manoa School of Architecture (UHMSoA) about a Pre-Architecture first-year program with courses offered in architectural drawing, 3D printing, etc., and to teach online to neighbor islands with Oahu as base.
- Not able to teach all AEC courses without dramatic changes to program.
- Geared to create pathways from high schools to community colleges to UHMSoA.
- Further discussions needed on which program reorganization model to follow whether it be one campus with remote or hybrid delivery at other campuses or a hub & spoke model.
- Offers ½ of AEC courses in fall semester and ½ in spring semester based on availability of lecturers and lab facilities.
- Would like to look at a year-round program, but require additional resources in personnel and facilities.
HawCC

- AEC advisory committee strongly opposes total online delivery of the AEC program.
- Let’s not take the community out of the college.
- Students are having difficulty with online courses so had to bring students back to face-to-face.
- Hawaii island infrastructure on bandwidth and WIFI accessibility very bad.
- Very interested to align AEC courses with HonCC and was heading in this direction prior to pandemic.
- Concerns about student support services regarding hub and spoke model.

Alignment of Courses and Programs

- Course alignment efforts were initiated in 2017. AEC courses from both HawCC and HonCC programs are cross referenced with a spreadsheet created by Norman Takeya listing all the courses offered. While both AEC programs have the same CIP code of 15.1303, AEC courses are not currently aligned.
  - Eleven AEC courses were indicated to have the potential for alignment.
  - A preliminary agreement was made to align an initial 3 to 4 courses with common course numbering and name. Barriers to alignment were on contact hours and in teaching methods.
  - Dean Umehira offered to facilitate course alignment discussions with the objectives to align course number, course title, course abbreviation, schedule type, credit hours, contact hours, teaching equivalencies, course descriptions, and course learning outcomes (see draft agreement A).
  - Additional Program Coordinating Council (PCC) meetings are essential to consider industry needs and advisory committee input. The courses identified have potential to be aligned with changes and concessions on both sides. MauC and KauCC will also need to be included in these discussions.

- Potential benefits of system-wide articulation: In 2017, HawCC and HonCC met with UHMSoA and UH West Oahu (UHWO) to evaluate courses between HawCC and HonCC and discuss the possibilities of formal articulation of AEC courses across the UH campuses with the following benefits:
  1. Begin discussion on formulating an articulation agreement with UHMSoA on a Pre-Architecture track at the CC level.
  2. Begin discussion on formulating an articulation agreement with UHWO Facilities Management program on a 2+2 model.

- The new program name is being discussed from current program name: Architectural, Engineering and CAD Technologies (AEC) to new program name: Architecture, Engineering and Construction Technologies (AEC).
- There is a need for a Pre-Architecture track at HonCC to meet the shift in industry and the software it uses. For HonCC’s AEC program to offer a Pre-Architecture track, they need to make a shift from AutoCAD to a Revit based study as well as incorporate architecture courses into the curriculum. HawCC already has Basic Architectural Studio courses in its curriculum. In 2020, 75% of HonCC’s first-year students in the Architectural Technology Track have ambitions of becoming an architect. HonCC is aware that the neighbor islands take longer to adapt new software so a more phased approach will be required for all programs to complete the transition and alignment.
**Recommendations**

1. Alignment of AEC courses and creation of ARCH courses need to happen between HonCC and HawCC before any program reorganization model can take place. This coordination of academic plans and schedules across the campuses will enable students to make academic progress and reduce reliance on lecturers and faculty overload.

2. Pre-architecture map for UHMSoA does not change HonCC's AEC course offerings but will include more offerings especially in design studio areas that supports HawCC's program.

3. UHMSoA students would be encouraged to take these AEC and ARCH courses in the pre-architecture program created by HonCC.

4. RU offered his assistance to facilitate course alignment discussions and agreement between HonCC and HawCC in AEC and appropriate ARCH courses that would be offered in the AEC program, but not BLPR courses.

5. Once AEC and ARCH courses are aligned, campuses can strategize the following:
   
   a. Share faculty that can teach AEC courses online to reduce lecturer costs
      i. Once campuses agree on change in course delivery to lecture format, HawCC and HonCC will formally align several courses between the campuses.
      ii. Discussion began regarding having different campuses teach certain courses. i.e., HawCC to teach AEC 110 and HonCC to teach AEC 160 as an example.
   
   b. Share and/or purchase technology software and other resources to reduce costs
   
   c. Ability to fill low-enrolled classes
Course Alignment Agreement A – Draft

Discussed at AEC PCC meeting on ________ and revisions to course number, course title, course abbreviation, schedule type, credit hours, contact hours, teaching equivalencies, course descriptions, and course learning outcomes will be made where appropriate.

<table>
<thead>
<tr>
<th>Catalog Course Titles</th>
<th>HawCC</th>
<th>HonCC</th>
<th>KauCC</th>
<th>UHMC</th>
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</thead>
<tbody>
<tr>
<td>Drafting Conventions and Materials</td>
<td>AEC 100 (5)</td>
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<tr>
<td>Construction Graphics and Conventions</td>
<td>AEC 101 (3)</td>
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<tr>
<td><strong>Basic AutoCAD</strong></td>
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<td>AEC 110 (4)</td>
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<td><strong>AutoCAD 1</strong></td>
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<td>AEC 110 (3)</td>
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<tr>
<td><strong>Computer Aided Drafting</strong></td>
<td>AEC 112 (3)</td>
<td></td>
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<td>AEC 110 (4)</td>
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<tr>
<td>Building Information Modeling</td>
<td></td>
<td>AEC 234 (1)</td>
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<tr>
<td>3D CAD Imaging</td>
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<td>AEC 161 (3)</td>
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<td>Residential Planning and Design</td>
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<td>AEC 164 (3)</td>
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<td>Residential Design and Construction Draw</td>
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<tr>
<td>Residential Working Drawings</td>
<td>AEC 120 (6)</td>
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<tr>
<td>Residential Contract Drawings and Codes</td>
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<td></td>
<td>AEC 210 (3)</td>
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<tr>
<td>Introduction to the Built Environment</td>
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<td>AEC 237 (3)</td>
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<tr>
<td>Introduction to Architecture</td>
<td>AEC 115 (2)</td>
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<tr>
<td>Commercial Working Drawings</td>
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<td>AEC 260 (4)</td>
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<tr>
<td>Commercial Contract Drawing</td>
<td>AEC 240 (3)</td>
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<tr>
<td>Building Services</td>
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<tr>
<td>Introduction to Building Services and BIM</td>
<td>AEC 241 (3)</td>
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<td>AEC 261 (3)</td>
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<tr>
<td>Land Surveying</td>
<td></td>
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<tr>
<td>Geomatics and Land Surveying I</td>
<td>AEC 113 (2)</td>
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<td>AEC 277 (3)</td>
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<tr>
<td>Land Surveying II</td>
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<td>AEC 278 (3)</td>
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</tr>
<tr>
<td>Geomatics and Land Surveying II</td>
<td>AEC 247 (2)</td>
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<tr>
<td>Preparation for Employment in the AEC Industry</td>
<td></td>
<td>AEC 289 (2)</td>
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<tr>
<td>Introduction to Drafting Career Services</td>
<td>AEC 249 (1)</td>
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Agreed upon course number, title, schedule type, credits, contact hours, TE’s, description, and course learning outcomes.

AEC 110/112

Effective Fall ____, each community college campus offering this course has agreed to:

Course alpha and number:
HawCC – AEC 112 (3 credits) (6 hours lec/lab) = ___ contact hours = ___ TE’s
HonCC – AEC 110 (4 credits) (4 hours lec) = 60 contact hours = 4 TE’s
KauCC – AEC 110 (3 credits) (2 hours lec and 2 lec/lab) = ___ contact hours = ___ TE’s
MauC – AEC 110 (4 credits) (4 hours lec) = 60 contact hours = 4 TE’s

Course title:
HawCC – Computer Aided Drafting
HonCC & KauCC – Basic AutoCAD
MauC – AutoCAD 1

Course abbreviation (only 30 characters allowed):

Prerequisite or Co-requisite
HawCC – none
HonCC – AEC 101 and AEC 118
KauCC – “C” or higher in AEC 81
MauC – BLPR 101 or equivalent training/experience with consent.

Recommended Prep
HawCC – Mechanical drawing and computer keyboarding experience
HonCC – “C” or higher in a high school CAD drafting course, or equivalent CAD Training/experience
KauCC – none
MauC – ICS 101 or BUSN 150, and placement at ENG 100

Schedule type:
LEC or LEC/LAB ???

Credit Hours:
3 or 4 ???

Contact Hours:
45 or ???

Workload (TE - teaching equivalencies):
3 or ???

Course description:

HawCC – Introduction to AutoCAD’s basic drawing commands including features, functions, and operations. Students will also learn how to create blocks, external references, and how to utilize paper and model space layouts.

HonCC – The foundation AutoCAD course in the Architectural, Engineering and CAD Technologies program. Basic commands and operations from 2D drawing and editing tools to creating solid models.
and rendering. 2D drawing, text, dimensions, blocks, hatching, reference files, sharing data, 3D drawing, plotting, and more. Designed to qualify students for Autodesk certification. This course also available non-credit in four modules.

**KauCC** - This course reinforces fundamental essential Computer-Aided Design (CAD) operator skills introduced in AEC 81, Introduction to AutoCAD, by providing additional concepts and tools that demonstrate technical knowledge essential to the architectural, engineering, and construction technology related fields.

**MauC** - Introduces the foundation of AutoCAD. Covers basic commands and operations from 2D drawing and editing to creating solid models and rendering. Teaches 2D drawing, text, dimensions, blocks, hatching, reference files, sharing data, 3D drawing, and plotting. Prepares students for Autodesk certification.

**Course Learning Outcomes:**

- **HawCC**
  - 
- **HonCC**
  - 
- **KauCC**
  - 
- **MauC**
  - 