

# UNIVERSITY OF HAWAI'I SYSTEM ANNUAL REPORT



REPORT TO THE 2012 LEGISLATURE

Annual Report on  
The Construction Academy Curriculum

HRS 304A-1144

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# THE CONSTRUCTION INITIATIVE BACKGROUND

The Construction Academy began in 2004 with a \$1.4 million grant from the U.S. Department of Labor. This grant started a pilot program whereby the University of Hawai'i's Honolulu Community College (HCC) partnered with eight Department of Education high schools on O'ahu—Kahuku, Kailua, McKinley, Mililani, Pearl City, Radford, Waipahu, and Waialua—to prepare high school students with the technical, academic, and employability skills necessary to pursue a career in the construction industry. The initial results of this federally-funded academy model displayed such great potential that in late 2005 many associated with education and construction felt it warranted expansion.

By late 2005, the construction and building industry found itself in a dire situation. Construction projects and developments could move no faster unless there were more qualified workers for the job sites. In late 2005, the industry approached HCC to request its assistance in educating and training a greater number of qualified construction workers. In a true industry-education partnership, HCC, with its experience in the pilot Construction Academy as well as its long history in Apprenticeship Training, developed a comprehensive proposal (the "Construction Initiative") that encompassed both high school education (Construction Academy) and post-high school career training (Apprenticeship).

In session 2006, the Hawai'i State Legislature passed Senate Bill 2980 SD2, HD1, CD1, which appropriated \$5.4 million to expand the Construction Academy to other public high schools on O'ahu as well as on the islands of Kaua'i, Maui, and Hawai'i, and to increase Apprenticeship Training at Honolulu, Hawai'i, Kaua'i, and Maui Community Colleges.

# THE CONSTRUCTION ACADEMY

From servicing over 200 students at 8 pilot schools during the 2005–2006 school year, the Construction Academy has grown to a capacity of over 2000 students in 35 high schools statewide. In this pre-apprenticeship program, students actively participate in an integrated classroom setting that promotes the use of math, reading, and writing skills as they engage in building and construction activities. At the end of the course, students build real world projects such as picnic tables and storage sheds to test the skills they have learned throughout the year. This hands-on approach to learning requires students to apply skills in math, communication, construction technology, problem solving, and most importantly, teamwork.

## Participating High Schools

Hawai'i Community College		Honolulu Community College		Kaua'i Community College	Maui Community College
Hilo	Konawaena	Campbell	McKinley	Kapa'a	Baldwin
Kau	Laupahoehoe	Farrington	Nānākuli	Kaua'i	Lahainaluna
Kea'au	Pahoa	Kailua	Pearl City	Waimea	Lana'i
Kealakehe	Waiakea	Kaimuki	Radford		Hana
Kohala		Kalaheo	Roosevelt		Maui
		Kahuku	Waialua		Moloka'i
		Kapolei	Wai'anae		King Kekaulike
		Leilehua	Waipahu		
		Mililani			

The statewide implementation of the Construction Academy model continues to make progress. The four participating community colleges have completed the University of Hawai'i System Articulation Agreement for its carpentry and architectural, engineering and CAD technology programs. Remaining flexible to the individual needs of each high school and its surrounding communities remains an essential element of implementation. The community college continues to evaluate its curriculum. In the Fall of 2011 all four participating community colleges revisited the current articulation agreements. All four community colleges agreed to continue with the current

agreement. A brief description of the progress being made by each community college campus is provided in the appendices of this report.

## **APPRENTICESHIP**

The second component of the Construction Initiative is focused on improving and expanding apprenticeship training. The University of Hawai'i Community Colleges currently administers the Related Instruction portion of apprenticeship training for most of the non-union and union construction industry apprenticeship programs. Substantial increases in apprenticeship enrollments in the 2007 to 2009 academic years severely strained the campuses' personnel resources, facilities and equipment. Additional funding was needed to more adequately meet the building industry's demands for training. The general fund appropriations received included allocations for support staff, lectureship costs and supplies and equipment.

Due to the continuing slump in the construction industry, enrollments in the 2011 academic year (4300) did again decrease from the previous year (5500). However, enrollment levels still remain beyond those in pre-Construction Initiative years. For example, in the 2003 and 2004 academic years that preceded the funding of the Construction Initiative, enrollments were approximately 3550 and 4150, respectively.

The Assistant Registrar who was hired in Fall 2008 and whose primary responsibility is record keeping for the apprenticeship program continued to provide much needed assistance with attendance records, grades and in generating reports such as cumulative earned hours that are used by apprenticeship coordinators to track their students. She also helped with registration and the resolution of problems that arose in this process. For example, she addressed problems that were encountered by apprentices who paid their tuition online via the MyUH Portal (which the College encourages) by alerting the Business Office of the need to redirect payments which were made in the wrong term and by providing apprentices with instruction on navigating within the Portal site. Additionally, she took on the responsibility of directly servicing our many apprenticeship training affiliates in matters related to registration, student records and special requests for data. Finally, she helped fine tune the process and schedule for disenrolling apprentices for non-payment of tuition and the result has been more accurate class rosters and the elimination of unnecessary charges or financial obligations for students. As reported earlier, the other campuses have much fewer

apprentices so their appropriations did not include funds for additional positions. The Apprenticeship Offices at these other colleges have had to obtain support from other departments on their campuses.

**Position:**

	<b>FTE Position Allocated</b>	<b>FTE Position Filled</b>
Administrative Profession Technical	1	1

The funds earmarked for lectureship costs helped the College retain a staff of approximately 170 instructors. During the past academic year, wages for approximately (24,766) instructor hours (676 apprenticeship classes) were paid with these funds. Maui Community College also received an allotment for lectureship with which they paid wages for approximately 3418 instructor hours (50 apprenticeship classes). The other campuses did not receive allocations for lectureship so instructors' payroll had to be funded from other sources.

Despite the downward trend in the last few semesters, apprenticeship enrollments remained elevated on all campuses this past year and are expected to remain at about these levels in the current academic year. At this point in the Fall 2011 semester, with several weeks still remaining in the term, enrollment at HCC is already beyond 1,900. Some programs register students in short-term classes through mid-December so the student count will increase over the next few weeks. In Spring 2012, based on reports from various training programs about projects that are on the near horizon, there might be a resurgence in the building industry and a concomitant increase in enrollments. Additionally, the Associated Builders and Contractors organization may finally obtain approval from the Department of Labor and Industrial Relations to begin offering their new Elevator Mechanic program and may also move ahead with expanding their recently resurrected Roofers program.

Due to the almost unprecedented numbers of apprentices on the campuses in recent past semesters, shop equipment was over taxed and materials and supplies depleted. The Colleges continued to use their operating/supplies budgets to replace old equipment and tools, purchase new types of equipment and replenish shop supplies and materials. This annual funding enabled the Colleges to gradually replace equipment that were outdated and/or unsafe and purchase different kinds of equipment that programs utilized to expand the scope of their training. For example, safety and

how-to DVDs were purchased for use by all trades, electric paint sprayers were bought for the Associated Builders and Contractors painters to help them expand their hands-on training beyond brush applications, Revue software (used with AutoCAD) was acquired for the Plumbers and Fitters. The latest AutoCAD release was purchased for the Apprenticeship computer lab to introduce apprentices to the latest version of this software and a number of power tools including circular saws and miter saws were bought to replace old, overused ones. Funds from the budget were also used to purchase materials such as sand and concrete for the Masons, lumber for the Carpenters, electrodes for the Welding shop, and oxygen, argon and acetylene gases for the Boilermakers and Ironworkers.

In summary, with the continued funding, the University of Hawai'i Community College Apprenticeship Offices were better able to serve their training programs. The Assistant Registrar at Honolulu Community College has worked to ensure the accuracy and integrity of apprenticeship records and improve data gathering and dissemination procedures. The funding for lectureship costs has helped the College satisfactorily fund our very full schedule of classes. Allocations for supplies and materials have enabled the Colleges to at least partially restock shop consumables that constitute huge and growing expenses as the costs of materials continue to increase dramatically. Perhaps the most significant beneficial outcome of this funding is that Colleges have been able to purchase much needed equipment. Departments have purchased equipment to replace old, outdated and/or unsafe models and types of equipment that were earlier not available for training. Therefore, in several significant ways, the Colleges have and will continue to be able to more completely meet the training needs of the construction industry.

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## HAWAI'I COMMUNITY COLLEGE

Community College	Hawai'i	
School Year	2010-11	2011-12
Participating High Schools	9	9
Building & Construction 1	229	228
Building & Construction 2	81	89
Advising	-	18
Blueprint Reading	10	11
Drafting Technology 1	43	47
<b>Total</b>	<b>353</b>	<b>382</b>

Participating high schools include Hilo, Ka'u, Kea'au, Kealakehe, Kohala, Konawaena, Laupahoehoe, Pahoia, and Waiakea High Schools.

Construction Academy classes on the island of Hawai'i continue to be offered in nine of the ten identified public high schools on the island. Enrollment current academic year is 382 students, an 8% increase from the 353 reported for the previous year. The increase in Building & Construction 2 students experienced in the prior year continued into the current year, a positive indication that the program is retaining students and students are progressing as intended. Graduates of the Construction Academy continue to articulate to the UHCC Community College system and apprenticeship programs, fulfilling the vision of the program. In fact, this year, 8 of the 15 students in Hawai'i Community College's first year Carpentry Program are alumni of the Construction Academy.

Assessment of student learning outcomes articulated with the UH Community College system as well as Department of Education were a priority during the academic year. Four different projects completed by Academy students were selected and assessed by industry professionals during the last academic year. This was done to determine the extent students are achieving learning outcomes articulated within the UH Community College system as well as Department of Education. Projects assessed included the student career development plan, the 4x4 playhouse project, the 12x12 wood

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project, and overall student skills. Results were positive and informative. They confirm Academy students are developing communication skills and employability skills at the prescribed level and are learning to safely use materials, tools, equipment and procedures to carry out tasks typical of construction projects. Areas for improvement identified during the assessment include development of construction math skills and tool selection. Activities are being implemented to address these areas.

The Construction Academy has home-based instructors in nine high schools. The Academy has 10.5 full time equivalent positions. One instructor position is currently under recruitment, which when filled will result in 7.5 FTE instructors and 2.0 FTE casual hires. The Academy is currently without a coordinator and clerk. When the Construction Academy coordinator retired June 2009, the position was not filled to help cover budget reductions. The Construction Academy's clerical position became vacant fall 2010 when the incumbent accepted a temporary reassignment to gain experience in a higher level position; it has not been filled due to the temporary nature of the incumbent's reassignment.

	FTE Positions Allocated	FTE Positions Filled
Home-Based Instructors *Laupahoehoe position changed from 1.0 FTE to .5 FTE	5.5	6.5 FTE/2.0 Casual Hires
Traveling Instructors (funds used for Instructors)	2.0	0 FTE/1.0 Casual Hire
Counselor (funds used for Instructors)	1.0	n/a
Clerical	1.0	Temporary Vacancy
Coordinator (funds used for instructor)	1.0	n/a
Total	10.5	9.5

**HONOLULU COMMUNITY COLLEGE****Introduction**

As the Honolulu Community College (Honolulu CC) Construction Academy steered into the 2010–2011 academic school year, the program encountered changes in leadership, shifts in personnel, and adjustments to spending which forced the Academy to redefine its direction and identify realistic solutions that would allow the program to provide the same (or improved) level of service while being conscious of the available resources.

Moving forward, the *Honolulu CC Construction Academy Strategic Plan, 2011–2016* was developed to help pave the way for the Academy’s future. With the program’s revised mission to *introduce Construction Academy high school students to the broad range of construction industry related careers and to provide opportunities to explore and develop the technical, academic, and employability skills necessary to make informed choices on possible career opportunities within the construction and other industries*, new objectives were created to align the program with Honolulu CC’s strategic outcomes and to set the overall course for the program.

**Scope of Service for the 2010–2011 School Year**

For the 2010–2011 school year, the Honolulu CC Construction Academy serviced eight Department of Education courses at 17 O’ahu high schools—Campbell, Farrington, Kahuku, Kailua, Kaimuki, Kalaheo, Kapolei, Leilehua, McKinley, Mililani, Nānākuli, Pearl City, Radford, Roosevelt, Waialua, Wai’anae, and Waipahu.

Out of the 1,207 students that were serviced, 71.3% of the students were enrolled in *Building & Construction Technology 1 and 2*; 10.7% in *Design Technology 1 and 2*; 16.1% in *Electricity & Electronics* and *Electronics Technology 1 and 2*; and 1.9% in *Directed Studies (Table 1)*.

**Table 1. Course Enrollment—Number of Students Serviced by Course**

Course Name	Student Count	%
Building & Construction Technology 1	613	50.8%
Building & Construction Technology 2	247	20.5%
Design Technology 1	88	7.3%
Design Technology 2	41	3.4%
Electricity & Electronics	82	6.8%
Electronics Technology 1	80	6.6%
Electronics Technology 2	33	2.7%
Directed Studies	23	1.9%
<b>TOTAL</b>	<b>1207</b>	<b>100.0%</b>

The program had a gender demographic of 92% males and 8% females (*Table 2*).

**Table 2. Student Demographics—Gender**

Gender	Student Count	%
Male	1,111	92.0%
Female	96	8.0%
<b>TOTAL</b>	<b>1,207</b>	<b>100.0%</b>

**Matriculation of Students into the UH System**

Nearly three quarters (73.8%) of the students serviced were juniors and seniors (*Table 3*).

**Table 3. Student Demographics—Gender**

Grade Level	Student Count	%
9	76	6.3%
10	240	19.9%
11	406	33.6%
12	485	40.2%
<b>TOTAL</b>	<b>1207</b>	<b>100.0%</b>

Of the 485 seniors serviced by the Academy, 197 (40.6%) were admitted into a University of Hawai'i (UH) System campus after graduating high school; 45.2% of those students were admitted to Honolulu CC (*Table 4*).

**Table 4. Matriculation of CNAC Students into the UH System**  
*Number of Students Who Matriculated into the UH System by Campus\**

UH Campus	Student Count	%
Hawai'i CC	2	1.0%
<b>Honolulu CC</b>	<b>89</b>	<b>45.2%</b>
Kapi'olani CC	38	19.3%
Leeward CC	41	20.8%
UH Mānoa	15	7.6%
UH West O'ahu	1	0.5%
Windward CC	11	5.6%
<b>TOTAL</b>	<b>197</b>	<b>100.0%</b>

\*Students who matriculated into the UH System were defined as seniors who were admitted into a UH Campus after graduating high school (Summer 2011, Fall 2011, or Spring 2012).

One hundred eighty-eight students identified a field of study (nine students are currently *unclassified*) among 28 majors (*Table 5*). Of these 188 students, 58 (29.4%) chose to major in a construction-related field.

**Table 5. Matriculation of CNAC Students into the UH System**  
*Number of Students Who Matriculated into the UH System by Major\**

Student Majors	Student Count	%
Administration of Justice	4	2.0%
Aeronautics Maintenance Technology	3	1.5%
Architectural, Engineering, & CAD Technologies	7	3.6%
Architecture	2	1.0%
Auto Body Repair & Painting	1	0.5%
Automotive Technology	21	10.7%
Carpentry Technology	16	8.1%
Civil Engineering	2	1.0%
Commercial Aviation	1	0.5%
Computing, Electronics, & Networking Technology	1	0.5%
Culinary Arts	10	5.1%
Electrical Installation & Maintenance Technology	5	2.5%
Fire & Environmental Emergency Response	4	2.0%
General Arts & Sciences	1	0.5%
Liberal Arts	74	37.6%
Management/Management Essentials	1	0.5%
Marine Biology	1	0.5%
Music & Entertainment Learning Experience	1	0.5%
Natural Sciences	2	1.0%
Pre-Business	1	0.5%
Pre-Engineering	6	3.0%
Pre-Mathematics	1	0.5%
Public Administration	1	0.5%
Refrigeration & Air Conditioning Technology	3	1.5%
Sheet Metal & Plastics Technology	2	1.0%
Small Vessel Fabrication & Repair	1	0.5%
Unclassified	9	4.6%
Welding Technology	15	7.6%
Zoology	1	0.5%
<b>TOTAL</b>	<b>197</b>	<b>99.8%</b>

\*Students who matriculated into the UH System were defined as seniors who were admitted to a UH Campus after graduating from high school (Summer 2011, Fall 2011, or Spring 2012).

 **Construction-Related Majors**

Table 6 lists the degrees and certificates sought by the students who matriculated into the UH System. Of 197 students, 4.6% are pursuing *certificates*, 83.2% for *associate's* degrees, 6.6% for *bachelor's* degrees, and 1.0% for *doctorate* degrees.

**Table 6. Matriculation of CNAC Students into the UH System**  
*Number of Students Who Matriculated into the UH System by Degree & Certificate Sought\**

<b>Degree/Certificate</b>	<b>Student Count</b>	<b>%</b>
Certificate Of Achievement	7	3.6%
Certificate Of Completion	2	1.0%
Associate In Arts	72	36.5%
Associate In Applied Science	70	35.5%
Associate In Science	22	11.2%
Bachelor of Arts	9	4.6%
Bachelor of Science	4	2.0%
Doctor of Architecture	2	1.0%
Non-Degree	9	4.6%
<b>TOTAL</b>	<b>197</b>	<b>100.0%</b>

Due to budget the short fall, not all vacant positions have been filled. Those position that were filled were hired as 9 month faculty. All faculty positions are assigned to multiple schools to cover the reduction in staff. To compensate for the position reduction and to better meet the needs of the program, the traveling instructor description is no longer applicable. All instructors are expected to be flexible enough to travel to multiple schools as the program needs are identified. The idea is to assign faculty to schools to best meet the needs of the students.

<b>Positions:</b>	<b>FTE Position Allocated</b>	<b>FTE Position Filled</b>
Faculty 11 month:	17	13
Faculty 9 month:	3	3
Administrative Profession Technical	1	1
Clerical	1	1
Counselor	1	1
	<b>23.00</b>	<b>19.00</b>

### Summer Program 2011

The Honolulu CC Construction Academy held its 2011 Summer Program from June 6, 2011 through July 15, 2011. High school students who will be entering grades 10–12 and recent 2011 graduates were admitted to Honolulu CC for the summer and were registered in a three credit course, *IEDB 20—Introduction to Building & Construction*, where they were exposed to five different trades (carpentry, welding, sheet metal, plumbing, as well as architectural, engineering, and CAD technologies).

During the summer, content area instruction was facilitated by Honolulu CC faculty who specialize in each trade. Where available, Honolulu CC faculty who regularly teach on campus were utilized as the content area instructors. This proved to be advantageous for both the program faculty and the students because: 1) they were able to develop instructor-student relationships; 2) students learned about the program from the actual (Honolulu CC) program instructor; and 3) the program faculty were able to personally promote their programs and trades to a captured audience.

For six weeks, students spent approximately one week learning about each trade. To help students develop an identity with fellow students and faculty, students were grouped into cohorts and assigned to a Honolulu CC instructor who served as their “mentor” throughout the course of the program.

To help students prepare for the world of work, students participated in weekly employability skills workshops where they learned about job search skills (employment applications, resumes, cover letters, and thank you letters), interviewing tips, appropriate workplace behavior, and general business and dining etiquette.

All of the 2011 high school graduates also met individually with a counselor who helped them take the next step in making their post-high career or educational goals a reality.

The objectives of the Honolulu CC Construction Academy Summer Program are to:

1. **Engage Student Learning:** Offer students a learning opportunity where they can experience applied instruction in various construction-related fields.

2. **Build Relationships:** Develop relationships with participants to aid in the matriculation of students into the UH System, particularly Honolulu CC.
3. **Offer Professional Development Opportunities:** Due to the distribution of instructors at various high schools on O‘ahu and the variance in school schedules, it is difficult to offer professional development opportunities during the school year to Honolulu CC Construction Academy instructors. Through this summer program, “mentor” instructors rotate through each trade along with their assigned cohort. This allows them to refresh their knowledge about each trade, learn about the program offerings at Honolulu CC, and observe various instructional styles or ways of presenting curriculum all while servicing the summer program participants.

The 2011 Summer Program afforded 76 high school students from various public, charter school, and private high schools on O‘ahu the opportunity to learn about the construction industry. Of these students, 32 students (42%) were 2011 high school graduates; 10 students (13%) were female; 32 students (42%) were of Native Hawaiian descent.

Ninety-four percent (30 students) of the program participants that were 2011 graduates shared their intent to enroll at a University of Hawai‘i System campus for the Fall 2011 semester; 78% (25 students) actually matriculated to a University of Hawai‘i System campus during the Fall 2011 semester; of the students that matriculated into the University of Hawai‘i System, 80% (20 students) were admitted to Honolulu CC.

Jasmine Garay was one of the students who matriculated to Honolulu CC for the Fall 2011 semester. As a Mililani High School Building & Construction Technology 1 student, Jasmine embraced the trades and learning about various aspects of the construction industry. She particularly gravitated toward welding when she was exposed to this trade via the Honolulu CC Construction Academy welding trailer. Jasmine’s exposure to carpentry and welding sparked her interest to learn more, so she applied and was accepted as a Honolulu CC Construction Academy Summer Program 2011 participant. Through the summer program, she was able to make informed decisions about her career choices.

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At this time, the once aspiring marine biologist is currently enrolled in a welding associate's degree program at Honolulu CC while she eagerly awaits an offer to join Hawai'i's plumbers and pipefitters union (Jasmine is currently number seven on a waiting list of 200).

**MAUI COMMUNITY COLLEGE**

The Maui College Construction Academy (CA) program, now in its sixth year, serves students in the seven high schools located on Maui, Molokaʻi, and Lānaʻi. Enrollment in the program has grown, from 389 in school year 2010-11 to 407 in 2012. Even with the challenges of the Department of Education (DOE) furloughs, reductions, and restructuring of classes, the Construction Academy continues to thrive on three islands of Maui County. The following are some of the accomplishments of the past year, made possible by continued legislative funding of the program:

- Students in all seven Maui County high schools completed projects in their classes according to professional guidelines and Construction Academy curriculum requirements. The projects included renovation of outer island faculty/staff housing in conjunction with the Department of Accounting and General Services (DAGS); professionally detailed playhouses that were donated to childcare centers; sturdy benches for county parks, and a number of other structures completed for various worthwhile purposes. As they carried out the projects, students gained hands-on practice in professional construction skills as well as in reading, writing, mathematics, communication, and teamwork.
- Construction Academy students participated in Skills USA, drafting and metal stud framing, construction competitions at state and or local levels.
- Twenty-seven 2011 high school seniors and nine other students who had previously taken part in the Construction Academy Program enrolled at Maui College in fall 2011(36 total Construction Academy alumni as new Maui College registrations). Through verbal communication with Construction Academy students, the staff has learned that many of the students are pursuing post-secondary and four year degrees throughout The University of Hawaiʻi System, as well as Architectural and Engineering degrees abroad.
- Renewable and sustainable energy practices, e.g., solar thermal hot water, photovoltaic energy, and wind power, were incorporated in all aspects of the educational programs.
- Instructors introduce aspects of green building to the students, focusing on the requirements contained in the National Association of Home Builders (NAHB) “*National Green Building Standards*” as well as the requirements of the U.S. Green Building Council’s (USGBC)

Leadership in Energy and Environmental Design (LEED) certifications, related to green building.

- Informational and planning meetings were held with Maui County DOE teachers, principals, and CTE coordinators.
- Maui College Construction Academy faculty worked with high school teachers to consistently implement the articulated curriculum.
- CA faculty members received training, received certifications and conducted workshops on safety, green design, and sustainability in the construction industry.
- Construction Academy faculty were guest speakers at events such as the 2011 Hawai'i Science, Technology, Engineering and Math (STEM) Conference, facilitating the introduction and guidance of students to the CA program, as well as the possibilities of post-secondary education and training in the construction, engineering and alternative energy trades.
- The Construction Academy counselor has regularly visited all seven high schools and numerous middle schools, making presentations in individual CA classes, assisting students with academic planning and goal setting, and answering questions about such things as financial aid, skills testing, and student housing.
- Portfolios were printed, assembled, and distributed to participating high school students for use as part of the assessment practices for the program's student learning outcomes.
- Construction Academy students participated in shadowing programs at Maui College during DOE breaks, improving the students' awareness and understanding of post-secondary programs at Maui College.
- Construction Academy Program staff attended University of Hawai'i Community College, Construction Academy Program Coordinators Conferences, workshops and updated training relevant to Building and Construction classes, Drafting classes, alignment of curriculum, and program development
- All Maui College Construction Academy positions funded by the State Legislature in 2006 remain filled by qualified personnel:

Although three of the high schools are located far from the main Maui College's Kahului campus and must be reached by plane (Moloka'i), boat (Lana'i), or a long automobile trip over a

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winding road (Hana), their programs are thriving. Construction Academy instructors' present classes that are designed to meet the needs of the individual communities, and all classes are taught according to the professional standards in the articulation agreement.

The close, cooperative relationship between Construction Academy instructors and Sustainable Construction Technologies instructors at Maui College continues to benefit both of the programs and the students, maintaining articulation and promoting post-secondary education.

	<u>FTE Position Allocated</u>	<u>FTE Position Filled</u>
Home-based Instructors	4	4
Traveling teacher	1	1
Counselor	1	1
Clerical	1	0

<b>Maui College Construction Academy Student Data 2011-2012</b>						
<b>Name</b>	<b>Number of students</b>	<b>TIU5800 B &amp; C 1</b>	<b>TIN5814 B &amp; C 2</b>	<b>TIU5310 Draft 1</b>	<b>TIN5320 Draft 2</b>	<b>SPED</b>
<b>Baldwin</b>						
Male	103					
Female	6					
<b>Total</b>	<b>109</b>	<b>46</b>	<b>21</b>	<b>16</b>	<b>1</b>	<b>12</b>
<b>Hana</b>						
Male	3					
Female	2					
<b>Total</b>	<b>5</b>	<b>1</b>	<b>0</b>	<b>4</b>	<b>0</b>	<b>2</b>
<b>KKHS</b>						
Male	17					
Female	0					
<b>Total</b>	<b>17</b>	<b>14</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>1</b>
<b>Lahainaluna</b>						
Male	61					
Female	15					
<b>Total</b>	<b>76</b>	<b>24</b>	<b>7</b>	<b>31</b>	<b>14</b>	<b>3</b>
<b>Lanai</b>						
Male	25					
Female	2					
<b>Total</b>	<b>27</b>	<b>10</b>	<b>10</b>	<b>5</b>	<b>2</b>	<b>6</b>
<b>Maui</b>						
Male	73					
Female	1					
<b>Total</b>	<b>74</b>	<b>51</b>	<b>23</b>	<b>0</b>	<b>0</b>	<b>9</b>
<b>Molokai</b>						
Male	88					
Female	11					
<b>Total</b>	<b>99</b>	<b>58</b>	<b>7</b>	<b>34</b>	<b>0</b>	<b>8</b>
<b>Total CA Students:</b>	<b>407</b>	<b>As of Nov 3, 2011 crr</b>				
		<b>Males:</b>		<b>370</b>	<b>91%</b>	
		<b>Females:</b>		<b>37</b>	<b>9%</b>	
		<b>Special Education:</b>		<b>41</b>	<b>10%</b>	

**KAUA‘I COMMUNITY COLLEGE**

Participation:

The current student enrollment for the high schools on Kaua‘i totals 185 students. In the Building and Construction courses the total number of students is 115 and 35 students are seeking the college credit offered as they have indicated that they will be seeking college enrollment. In the Blueprint Reading and the Technical Drawing courses we have 70 students and 54 have stated that they will be seeking the college credit offered as they have indicated that they will be seeking college enrollment. In addition, out of the number of students indicating their plans for college, 27 have stated their choice to be Kaua‘i Community College. There are a total of 9 females in our programs; 6 at Waimea High School and 3 at Kapa‘a High School.

Kapa‘a High School enrollment in Construction Academy classes has increased mainly due to the new Drafting Technology 1 course involving blueprint reading and introduction to AutoCAD. There are two classes of Building and Construction -1.

KAPA‘A HIGH SCHOOL	
COURSE	STUDENTS
BUILDING & CONSTRUCTION - 1	46
BUILDING & CONSTRUCTION - 2	0
DESIGN TECH 1	57
TOTAL STUDENTS	103

Kaua‘i High School’s involvement with the program, due to new faculty at the high school, is returning. We are working with the new teacher, assisting him with understanding our curriculum, and providing both guidance and materials for his one class in Building and Construction -1, a class of 31 students. In addition, the teacher is attending our training on our complete curriculum to provide for an expanded course offering in the future, including Building and Construction -2 and Design Tech -1 courses.

KAUA'I HIGH SCHOOL	
COURSE	STUDENTS
BUILDING & CONSTRUCTION - 1	31
TOTAL STUDENTS	31

Waimea High School enrollment has some increase this year, with the addition of our Design Technology 1 course. We are offering two different courses now that provide a path to KCC dual credit.

WAIMEA HIGH SCHOOL	
COURSE	STUDENTS
BUILDING & CONSTRUCTION - 1	38
DESIGN TECH 1	13
TOTAL STUDENTS	51

Equipment:

The equipment to the schools has been distributed and has been completed along with an evaluation of the condition of the equipment after completing our fourth year. The equipment maintenance program that we have imbedded in the construction academy program is working well, as we still have only had minor issues with a limited number of tools in regards to safety and performance. The acquisition of some additional equipment to minimize risk in working with the students has allowed us to broaden the scope of our curriculum. Maintaining a safe work environment is still an ongoing challenge. In Building and Construction-2 we are challenged with the class sizes of the high schools. Materials and equipment are being ordered and staged at KCC, and we are distributing them as needed to each school. Our training for the DOE Industrial Arts teachers from the schools at KCC along with conducting general coordination and informational meetings is proceeding, although due to budget issues, challenges in this area are ongoing.

The introduction of AutoCAD, along with a portable computer lab, has allowed us to enhance all of our classes at the high schools in providing an additional resource and tool for the students to work with. We are currently offering three classes of Design Tech-1 at Waimea and Kapa‘a High Schools.

### Special Projects:

Over the past year we have brought to the Building & Construction classes a culminating project of a building that the students build. Starting at the foundation, including the site location, layout, and construction of the various building systems, the students are engaged in the process and have demonstrated the application of the training they received in the construction of the building. The project remains ongoing as new classes are involved with additions, alterations, and maintenance of the building. The Design Tech course has been involved with the project as well, providing design and construction drawings for the modifications the students want to incorporate into the project. In addition, the project provides an opportunity to invite community members involved in the construction industry to offer comments and criticism. This project also offers an opportunity to expose the students to the new building codes as well as green and sustainable building methods that are introduced where appropriate.

The Construction Academy program continues to provide assistance to the students at the high schools to meet their community service obligations. In the past, the students have built benches and tables using donated materials that the high school seniors prepared for the middle school students to do the final assembly within their limits of skills, abilities, and acceptable tasks. This year we are continuing with this and provide the guidance for the students to accomplish the projects that they are involved in. The students come to Kaua‘i Community College after school, and under the supervision of the Construction Academy instructors, worked on these projects.

We are continuing a strong relationship with the local Carpenters Union. They have been a tremendous supporter of our program, providing school visits to offer a walk-through of the students' work, and constructive criticism to the students. The students are required to maintain and record their work and progress in a portfolio. The representatives have let the students know the value of this and guided the students to hold on to that, as it is a resume of their ability. These visits provide the students an opportunity to talk, interact and experience actual job site processes with the

## **APPENDIX**

carpenters working in the industry. This year we received a request from the local carpenters union for a recommendation for some of our students to enter into the apprenticeship program.

Due to continued growth of the Construction Academy program at the high schools, and the Facility Engineering program, we are going to offer of a 2-year AAS in both Carpentry Technology and Electrical Installations and Maintenance Technology programs at Kaua'i Community College in the Fall 2012 semester.