

Maui Community College
DRAFT
Action Request:
Revision of Carpentry Program to
Sustainable Construction Technology Program

DRAFT

May 21, 2007

MEMORANDUM

TO: Kitty Lagareta
Chairperson, Board of Regents

VIA: David McClain
President

VIA: John Morton
Interim Vice President for Community Colleges

FROM: Clyde M. Sakamoto
Chancellor, Maui Community College

SUBJECT: Revision of Carpentry to Sustainable Construction Technology

SPECIFIC ACTION REQUESTED:

It is requested that you approve the revision of Maui Community College's Carpentry program to a Sustainable Construction Technology program. This involves the consolidation of the Carpentry, Building Maintenance, Sustainable Technology, Drafting, and Welding programs into the one Sustainable Construction Technology program.

ADDITIONAL COST:

There will be no additional cost required for the consolidation.

RECOMMENDED EFFECTIVE DATE:

Effective Spring 2008

PURPOSE:

The purpose of this consolidation is to meet the present and future community and workforce needs for qualified workers in the construction industry in Hawai'i. Estimates of employment in construction-related jobs in 2005 were approximately 16,720 and are projected to grow by nearly 17% to over 19,573 jobs by 2011. In addition to the about 175 jobs per year that will need to be filled due to growth of the sector, another 301 jobs will need to be filled as replacement for existing workers who are expected to leave their current positions. This total of 476 jobs per year to fill does not reflect the potential for job growth presented by the significant increase of federal government investment in

modernizing military facilities in the state of Hawai`i or new state and private investments (see EMSI Construction-Related Current Positions and Projections). The consolidation of the five construction-related programs into this one Sustainable Construction Technology program will make it possible for MCC to offer students the variety of complex skills and knowledge that professionals say that workers will need in order to be qualified for future well-paying careers in the construction industry and related fields.

BACKGROUND INFORMATION:

Program Health Indicators show that for the past several years, the number of majors, the number of certificates and degrees earned, and the number of full time equivalent students have all dropped in the Maui Community College Carpentry, Building Maintenance, and Sustainable Technology programs (see Program Review Indices for Construction Programs). At the same time, Maui, along with the entire state of Hawai`i, has been experiencing a construction boom. Trained construction workers are in short supply, and contractors are hiring entry level workers who are only minimally trained in the construction industry.

According to surveys of former students and members of the community, instead of offering specialized training in a specific program, MCC needs to offer training that will qualify students for the well-paying construction occupations that require complex skills and knowledge, often in several construction areas. Students who master a variety of skills, including computer aided design, preventative maintenance, and sustainable technology and other “green” building techniques qualify for jobs that pay from \$46,000 to \$70,000 per year, including fringe benefits. These jobs will allow students to live productive lives and support their families.

In addition to beginners, those benefiting from this training would include individuals already employed in the construction field who need to enhance their skills and abilities so that they may assume more responsibility, function more effectively in their jobs, and move into positions for which they previously had not been trained. In addition to construction workers, these include such positions as construction supervisors, auditing clerks, and cost estimators. These positions do not require a college degree, but do require training and experience that is gained through a broad understanding of and training in the construction industry. Many of the classes will be offered in the evening to accommodate students’ working schedules.

Classes in the new Sustainable Construction Technology program will also align with classes in the high school Construction Academy program that is currently being implemented by MCC teachers in all seven Maui County high schools. Thirty-five percent of Hawai`i’s high school students do not graduate from high school, and nearly fourteen percent of graduates do not enroll in college within two years of graduation. Many of these individuals lack stable career opportunities. The Construction Academy classes in high school and MCC construction technology training provide a way for them to learn hands-on skills and abilities that can change their lives.

Classes in the Sustainable Construction Technology program articulate with those in the high school Construction Academy program. Students who complete an equivalent class in high school and earn a B or better also earn MCC credit for that class. This gives a student an added incentive for continuing his or her training in college.

The program will offer students a range of opportunities. They may take whatever specific class or classes they need in order to upgrade their skills. They may also earn certificates of competence in seven specialized areas: basic carpentry skills (6 credits), rough finish carpentry (8 credits), basic drafting skills (6 credits), energy production (6 credits), safety (2 credits), electrical maintenance (5 credits), maintenance painting (4 credits), small equipment repair (6 credits), maintenance plumbing (4 credits), and welding for trades (3 credits). Students may also earn a certificate of completion in Introductory Sustainable Construction Technology (16 credits) and a certificate of achievement in Sustainable Construction Technology (33 credits). These certificates are under the umbrella of an Associate in Applied Science (AAS) degree that will give students a wide range of construction skills as well as math and English, along with liberal education electives. A full time student may complete the AAS degree in four semesters (see attached program sheet). Twelve certificates and one degree will take the place of the 21 certificates and two degrees presently offered (see attached listing of certificates and degrees).

At one time, four full time positions were assigned to these programs. Currently, two full time faculty members are employed in the five areas. One, in an eleven-month position, serves as coordinator of four of the programs. He is also the lead teacher in sustainable technology and carpentry. The full time nine-month building maintenance teacher handles maintenance and electricity classes. A variety of lecturers with the appropriate professional skills and certification are recruited to teach courses in specialized areas.

<p align="center">Existing Certificates and Degrees</p>	<p align="center">New Consolidated Certificates & Degree</p>
<p align="center">BUILDING MAINTENANCE</p> <p>Certificates of Competence:</p> <ol style="list-style-type: none"> 1. Basic Electronics 2. Electrical Maintenance 3. Maintenance Painting 4. Small Equipment Repair 5. Maintenance Plumbing <p>Certificates of Achievement:</p> <ol style="list-style-type: none"> 6. Building Maintenance 	<p align="center">SUSTAINABLE CONSTRUCTION TECHNOLOGY</p> <p>Certificates of Competence:</p> <ol style="list-style-type: none"> 1. Electrical Maintenance 2. Maintenance Painting 3. Small Equipment Repair 4. Maintenance Plumbing 5. Basic Drafting Skills 6. Safety 7. Energy Production 8. Basic Carpentry Skills 9. Rough and Finish Carpentry 10. Welding for Trades <p>Certificate of Completion:</p> <ol style="list-style-type: none"> 11. Introductory Sustainable Construction Technology <p>Certificate of Achievement:</p> <ol style="list-style-type: none"> 12. Sustainable Construction Technology <p>Associate in Applied Science:</p> <ol style="list-style-type: none"> 13. Sustainable Construction Technology
<p align="center">DRAFTING TECHNOLOGY</p> <p>Certificate of Achievement:</p> <ol style="list-style-type: none"> 7. Drafting Technology 	
<p align="center">WELDING</p> <p>Certificate of Competence:</p> <ol style="list-style-type: none"> 8. Welding for Trades <p>Certificates of Completion:</p> <ol style="list-style-type: none"> 9. Basic Welding 10. Intermediate Welding <p>Certificate of Achievement:</p> <ol style="list-style-type: none"> 11. Welding 	
<p align="center">CARPENTRY</p> <p>Certificates of Competence:</p> <ol style="list-style-type: none"> 12. Basic Carpentry 13. Framing and Exterior Finish 14. Interior Finish, Cabinets, and Stairs 15. Green Building <p>Certificate of Achievement:</p> <ol style="list-style-type: none"> 16. Carpentry <p>Associate of Applied Science:</p> <ol style="list-style-type: none"> 17. Carpentry 	
<p align="center">SUSTAINABLE TECHNOLOGY</p> <p>Certificates of Competence:</p> <ol style="list-style-type: none"> 18. Energy Management 19. Energy Control 20. Energy Production 21. Biomass Processes <p>Certificates of Achievements:</p> <ol style="list-style-type: none"> 22. Sustainable Technology <p>Associate of Applied Science:</p> <ol style="list-style-type: none"> 23. Sustainable Technology 	

Sustainable Construction Technology Program Map

The Sustainable Construction Technology Program prepares students in general building construction and maintenance of large or small structures. It allows students to explore different trades prior to selecting a specialization.

Requirements for Certificates of Competence (Cert.Co.)

Basic Carpentry Skills: 6 credits

IEDB 20 (3), CARP20 (3)

Electrical Maintenance: 5 credits

ELEC 20 (3), 23 (2)

Rough and Finish Carpentry: 8 credits

CARP41 (3), 43 (3), 193V (2)

Maintenance Painting: 4 credits

MAIN 20 (2), 40 (2)

Basic Drafting Skills: 6 credits

BLPR 22 (3), AEC 80 (3)

Small Equipment Repair: 6 credits

ELEC 23 (2), MAIN 20 (2), 60 (2)

Energy Production: 6 credits

ENRG 101 (3), 103 (3)

Maintenance Plumbing: 4 credits

MAIN 20 (2), 50 (2)

Safety: 2 credits

OSH 20 (1), HLTH 31 (1)

Welding for Trades: 3 credits

WELD 19B, 19C, 19D

Certificate of Completion in Introductory Sustainable Construction Technology: 16 credits

IEDB 20 (3), MAIN 20 (2), ENRG 101 (3), ELEC 20 (3), OSH 20 (1), HLTH 31 (1), MATH 50T (2), 50Y (1)

Certificate of Achievement in Sustainable Construction Technology: 33 credits

Includes all coursework in the first and second semesters listed below.

Requirements for Associate in Applied Science (A.A.S.) Degree: 65-67 Credits

IEDB 20 (3)

CARP 20 (3), 41 (3), 40 (3)

ELEC 20 (3), 23 (2)

MATH 50T (2), 50Y (1)

AEC 80 (3)

COM 145 (3), or Speech 151 (3)

HLTH 31 (1)

COOP 193V (2)

Elective MAIN 65 (2)

MAIN 20 (2), 30 (2), 40 (2), 50 (2), 60 (2), 70 (2)

ENRG 101 (3), 103 (3)

WELD 19B (1), 19D (1)

BLPRT 22 (3)

OSH 20 (1)

Elective Natural Science (3)

Elective Social Science (3)

Elective Humanities (3)

ENG 55 (3) or ENG 22 (3)

A full-time student would take courses in this sequence:

First Semester (Fall)

*IEDB	20	Intro to Bldg & Const	3
MAIN	20	Intro to Bldg Maint	2
ENRG	101	Intro to Sus Tech	3
ELEC	20	Intro to Electricity	3
OSH	20	OSHA	1
HLTH	31	First Aid and Safety	1
MATH	50T (2) 50Y(1)		<u>3</u>
			16

Second Semester (Spring)

CARP	20	Basic Carp Skills	3
MAIN	40	Painting & Decorating	2
BLPRT	22	Blprt Rdg & Drftng	3
ENRG	103	Energy Production Sys	3
AEC	80	Basic Drafting	3
ENG 55 or ENG 22			<u>3</u>
			17

Third Semester (Fall)

CARP	41	Rough Carpentry	3
MAIN	30	Masonry	2
COOP	193V	Internship Const Acad	2
MAIN	60	Small Equip Repair	2
Weld	19B/19D	Welding for Trades	2
MAIN	50	Plumbing	2
COM 50 or Speech 151			<u>3</u>
			16

Fourth Semester (Spring)

CARP	43	Interior Finish	3
MAIN	70	Preventive Maintenance	2
ELEC	23	Electrical Wiring I	2
Elective MAIN 65 Air Conditioning & Refrig			0-2
Elective Natural Science			3
Elective Social Science			3
Elective Humanities			<u>3</u>
			16-18

* This course is also offered in high schools of Maui County which is being offered now as a part of their Construction Academy courses.