Luna Community College

Building Technology

Certificate

2017/2018

Luna Community College

Contents

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Building Technology

Certificate

31 Hours

Program Goals

This program prepares students with entry-level job skills in the building technology profession. Students are involved with all phases of construction to include: foundation, footings, blueprint reading, site layout, interior/exterior finish, roofing, as well as floor, wall and roof framing. Safety is covered in accordance with procedures and practices. Students will gain on-site observation and experience. With advisement, the Building Technology Certificate can assist students in obtaining National Center for Construction Education and Research (NCCER) and Associate General Contractors of American (AGC) Journeyman Certifications.

2015/18 Curriculum Profile

Completion of this certificate can be applied toward the Associate of Applied Science Degree in Vocational/Technical Studies.

Institutional Proficiency Requirements

In addition to the courses listed below for this program of study, students must also complete institutional proficiencies of ENG098 and MATH075.

Program Map(Click here for link)

The program map marks courses that are scheduled by semester in order to complete this degree within two years (or one year if applicable). Refer to Appendix A for the program map.

Professional Development

The lead instructor attended OSHA training.

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Courses Offered by Semester

Fall 2017

BT140 01 8.0 Heavy Equipment Operations LevII	VOC109 01 4.0 Fundamentals of Vocational Edctn -M-W--- 08/21/17 - 12/08/17	VOC117R 20 4.0 Blueprint Rdng & Constrctn Math
VOC117T 01 4.0 Blueprint Rdng & Constrctn Math		

Spring 2018

BT112 01 3.0 Building Construction I	BT113 01 4.0 Bldg Construction Application I	BT140 01 8.0 Heavy Equipment Operations LevII
VOC109 01 4.0 Fundamentals of Vocational Edctn	VOC117 01 4.0 Blueprint Rdng & Constrctn Math --T-R--	

Summer 2018

No classes were offered	

Program Student Enrollment (Three-Year Annual Trend)

2015/2016	2016/2017	2017/18
51	40	36

Retention Rates Fall to Spring

	Total Fall Enrollment #*	Spring Enrollment
2015-16	**23**	**24**
2016-17	**9**	**16**
2017-18	**5**	**8**

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Fall By Course

Course	Credit	# Students Enrolled	Student Credit Hours
BT140 01 8.0 Heavy Equipment Operations LevII	8	5	40
VOC109 01 4.0 Fundamentals of Vocational Edctn -M-W--- 08/21/17 - 12/08/17	4	6	24
VOC117R 20 4.0 Blueprint Rdng & Constrctn Math	4	1	4
VOC117T 01 4.0 Blueprint Rdng & Constrctn Math	4	6	24

Spring By Course

Course	Credit	# Students Enrolled	Student Credit Hours
BT112 01 3.0 Building Construction I	3	3	9
BT113 01 4.0 Bldg Construction Application I	4	1	4
BT140 01 8.0 Heavy Equipment Operations LevII	8	4	32

VOC109 01 4.0 Fundamentals of Vocational Edctn	4	4	16
VOC117 01 4.0 Blueprint Rdng & Constrctn Math	4	3	12

Summer By Course

Course	Credit	# Students Enrolled	Student Credit Hours
No summer classes offered			

Student Graduation (Three-Year Annual Trend)

2015/2016	2016/2017	2017/18
2	1	0

Synopsis of Significant Findings

- Enrollment rates over a three year period have declined.
- Graduation rates in the last three years have decreased.

Program Improvement Plans Implemented or In-Progress

To seek funds to obtain another heavy equipment simulator

Advisory Committee Work

- The advisory board needs to improve on creating meeting notes and to be sure they are on file and readily available to the director and the institution.

Student Advisement by Semester

- Lack of updating advisement notes on the LCC portal
- There is an uncertainty of whose job this will be regarding advisement as the department has yet to hire an advisor.

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Yearly Return on Investment

Costs for instruction are listed by course.

Revenue

				Total Students	Student Credit Hours	Tier	Tier Funding total (SCH X $199)	Tuition ($38 X # of Students)	Total Revenue	Instructor Cost
FY 1718 BUILDING TECHNOLOGY/REVENUE										
			BT140	5	40		$7,960	$190	$8,150	
			VOC109	6	24		$4,776	$228	$5,004	
			VOC117R	1	4		$796	$38	$834	
			VOC117T	6	24		$4,776	$228	$5,004	
			BT112	3	9		$1,791	$114	$1,905	
			BT113	1	4		$796	$38	$834	
			BT140	4	32		$6,368	$152	$6,520	
			VOC109	4	16		$3,184	$152	$3,336	
			VOC117	3	12		$2,388	$114	$2,502	
			Totals	33	165		$32,835	$1,254	$34,089	$0

Costs

1718 Costs-Building Technology					
	FT Instructor	**Instructor Salary**	**Fringe**	**Operational Costs 63&64**	**Total Costs**
	Joseph Montoya	$39,414.66	$2,844.57	$4,200	$46,459.23
	PT Instructor				
	Totals	$39,414.66	$2,844.57	$4,200.00	$46,459

<Include Class Cost Per Student (e.g., Revenue-Costs/students enrolled)>

$-343.61

<Include Cost per Graduate (e.g., Revenue-Costs/students graduated this year)>

$-12,370/0=0

Alumni Surveys

- Vocational Trades needs to create a format for the Alumni surveys

Student Alumni

- Vocational Trades needs to create a format for the student alumni to help the advisor and the institution stay in contact with alumni
- Examples. Where do they go? If they Transfer or go straight into a job; if a job, list job, if a transfer, list college.
- There is no survey taking place

Program Learning Assessment Plan (Weave)

Appendix B provides the program assessment of learning plan created by the faculty.

Curriculum Committee Work

No courses were submitted to the curriculum committee

Final Program Approvals (Board of trustees) approvals to move program forward

N/A

Accreditation

The program maintained the NCCER accreditation.

Evaluation of the Program

- It would be beneficial to the program to purchase another heavy equipment simulator.
- Enrollment and completion rates need to increase to justify the continuation of the program.
- Students struggle with construction math, which hinders them from progressing in the program towards a certificate or a degree.
- Develop the concrete program.
- Make sure that program gets support from the administration to help increase enrollment and completion.

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Appendix A: Program Map for Building Technology

Term 1 / Fall Semester	Credits	Term 2 / Spring Semester	Credits
BT112 Building Construction I	3	**BT114** Building Construction II	3
BT113 Building Construction Application I	4	**BT115** Building Construction Application II	4
VOC109 Fundamentals of Vocational Education	4	**APPROVED ELECTIVE**	2-8
VOC117 Blueprint Reading and Construction Math	4	**APPROVED ELECTIVE**	2-8
Semester Total	**15**	**Semester Total**	**16-18**
Milestones		**Milestones**	
Complete Math 075		Complete all Term 1 courses with a letter "C" grade or better	
Meet with Advisor		Meet with Advisor	
Accumulate 15 or more credits		Accumulate 30 or more Credits	
Maintain a 2.0 GPA or higher		Maintain a 2.0 GPA or higher	
Complete ENG 078 and/or ENG 098		Enroll in Term 3	
Enroll in Term 2		Apply for graduation	
		Graduate with a Certificate	

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Appendix B: Program and Student Assessment of Learning

Summary

Due to the loss of the full-time faculty, there is no consistent record of assessment data.

Please see the SLOA presentation for assessment on the VOC 109 course.

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Core Competencies Assessment-2017
Building Technologies Certificate Program
In Accordance with All NCCER and OSHA Requirements

Program Competencies	Assessment Procedures	Data & Outcomes	How Results Will be Used To Make Improvements	Goals/Priorities
I. Core Curriculum: Fundamentals of Vocational Education: Voc-109 *Identify the common causes of incidents and their related consequences. *Identify and convert units of length, weight, volume, and temperature between the imperial and metric systems of measurement *Identify and explain how to use various types of hand and power tools. *Identify and describe various types of construction drawings, including their fundamental components and features *Describe the listening, communication, trade skills, and speaking processes and their relationship to job performance.	*Students will pass end of module written exams with a score of 70% or above. *Performance Profile Exam and Quizzes will be graded on a 70% minimum to pass basis. *OSHA 10 Hour Construction Safety and Health Exam must also be passed with 80% or above in order to receive National Certification. *Students will pass program courses: Voc-109	* Completion of Voc-109 will give students a general comprehension and hands on experience of all program competencies for this Level * OSHA 10 Hour Construction Safety and Health Certification *Achieving Pass Rates on all end of module Performance Profile Exams, Worksheets, and Job Sheets *Achieving 70% and better on end of module Written Exams and Quizzes. *Upon completion of course with passing grade, students will be issued, through the National Registry of NCCER, their personal student NCCER credentials card. *With completion of further courses, this card will be updated to reflect student's most recent credentialing.	* Emphasis placed on areas of weakness during lecture. *Allow more preparation time before Performance Profile Exam. * More closely monitor students during Lab sessions, to verify where assistance is needed. *Associated General Contractors [AGC] program standards and curriculum allows for one Retest on Written Exams if 70% is not achieved.	*Achieve 10 Hour OSHA Construction Safety and Health Card. *Achieve 70% Pass Rate on all Written Exams *Achieve Pass Rates On all Performance Profile Exams *Prepare Students with Entry-Level Job Skills in the Building Technologies. *Completion one of Two Core Classes.
II. Level I: Building Construction I and Building Construction Application I: * Students will demonstrate mastery of the theory and practice of the following, in accordance with NCCER curriculum standards: * Building materials, fasteners, and adhesives	*Students will pass end of module exams with a score of 70% or above. *Performance Profile Exam and Quizzes will be graded on a 70% minimum to pass basis.	*Completion of BT 112-113 will give students a general comprehension and hands on experience for all program competencies for this Level. *Achieving Pass Rates on all end of module Performance Profile Exams, Work Sheets, and Job Sheets *Achieving 70% and better on end of module Written Exams.	* Emphasis placed on areas of weakness during lecture. *Allow more preparation time before Performance Profile Exam. * More closely monitor students during Lab sessions, to verify where assistance is needed.	*Achieve 70% Pass Rate on all Written Exams *Achieve Pass Rates On all Performance Profile Exams *Prepare Students with Entry-Level Job Skills in the Building Technologies.

Luna Community College Core Competencies Assessment-2017 Building Technologies Certificate Program In Accordance with All NCCER and OSHA Requirements				
Program Competencies	**Assessment Procedures**	**Data & Outcomes**	**How Results Will be Used To Make Improvements**	**Goals/Priorities**
*More in depth look at hand and power tools. *More in depth look at reading plans and elevations * Floor systems *Wall, ceiling, and roof framing *Introduction to concrete, reinforcing materials, and forms * Windows, Exterior Doors and Basic Stair Layout.	*Module worksheets and Job sheets are also part of assessment procedures *Project completions are added to students ongoing Portfolio. Students will pass program courses: BT112 BT113	*Upon completion of this course with a passing grade of 70% or higher, student will receive the appropriate credentials update on their personal NCCER credentials card.	*Associated General Contractors [AGC] program standards and curriculum allows for one Retest on Written Exams if 70% is not achieved.	*Completion of Second of Eight Levels
*Students will demonstrate mastery of the theory and practice of the following, in accordance with NCCER curriculum standards: *Rigging Equipment and Practices *Properties and Reinforcing of Concrete *Handling and Placing Concrete *Trenching and Excavating *Foundations and Slab-on-Grade *Vertical and Horizontal Formwork *Tilt-Up Wall Panels	*Students will pass end of module exams with a score of 70% or above *Performance Profile Exam will be on a 70% minimum to pass basis. *Module worksheets and Job sheets are also part of assessment procedures *Project completions are added to students ongoing Portfolio.	*Completion of STVE 125 will give students a more in depth comprehension and hands on experience of all program competencies for this Level. * Achieving Pass Rates on all end of module Performance Profile Exams, Work Sheets, and Job Sheets *Achieving 70% and better on end of module Written Exams and Quizzes. * Upon completion of this course with a passing grade of 70% or higher, student will receive the appropriate credentials update on their personal NCCER credentials card.	* Emphasis placed on areas of weakness during lecture. *Allow more preparation time before Performance Profile Exam. * More closely monitor students during Lab sessions, to verify where assistance is needed. *Associated General Contractors [AGC] program standards and curriculum allows for one Retest on Written Exams if 70% is not achieved.	*Achieve 70% Pass Rate on all Written Exams. *Achieve Pass Rates On all Performance Profile Exams *Prepare Students with Entry-Level Job Skills in the Building Technologies. *Completion of Fourth of Eight Levels

Learning Outcomes Assessment (SLOA)

Course: Fundamentals of Vocatio
Education: Voc-109
Semester: Spring 2017

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Learning Objectives for this Course

- Objective 1: Describe the processes related to hazard recognition and controls, including the H Communication (HAZCOM) Standard and the provisions of a Safety Data Sheet (SDS).
- Objective 2: Recognize some basic shapes used in the construction industry and apply basic ge measure them.
- Objective 3: Recognize and identify some basic hand and power tools and their proper uses in construction industry.
- Objective 4: Recognize and identify basic construction drawing terms, components, and symbo the different classifications of construction drawings
- Objective 5: . Communicate effectively in on-the-job situations using verbal and written form demonstrate critical thinking skills, and the ability to solve problems using those skills.
- Objective 6: Recognize and choose appropriate materials-handling equipment for the task and procedures required for materials handling.

Assessment Tools by Objective

- For objective 1: Written module examination and Performance Tasks
  - Closed book written examination
  - Performance Task
- For objective 2: Written module examination and Performance Tasks
  - Closed book written examination
  - Performance Task
- For objective 3: Written module examination and Performance Tasks
  - Closed book written examination
  - Performance Task

Assessment Tools for each objective

- For objective 4: Written module examination and Performance Tasks
  - Closed book written examination
  - Performance Task
- For objective 5: Written module examination and Performance Tasks
  - Closed book written examination
  - Performance Task
- For objective 6: Written module examination and Performance Task
  - Closed book written examination
  - Performance Tasks

Rubric Ratin

5 – Excellent 4 – Good 3 – Fair 2 – Unsatisfactory 1- Poor

Assessment Results

Student #	objective 1	objective 2	objective 3	objective 4	objective 5
1	4	4	3	4	4
2	4	3	4	3	3
3	3	5	4	3	4
4	4	3	4	5	3
5	3	3	4	5	4
6	4	3	4	5	4
7	3	4	3	3	5
Averages:	3.5	3.5	4	4.5	4.5

Analysis of objective 1:

- The average performance rate was 3.5 for objective 1.
- Average performance rate for last semester was 3 for this obj
- Possible explanation for differences: A greater emphasis on t maintaining a safe work environment.
- Significance for future teaching: Safety is a learned behavior attitude. A safety culture needs to be created so that students value of a safe work environment and support it through thei

Analysis of objective 2:

- : The average performance rate was 3.5 for objective 2.
- Average performance rate for last semester was 3 for this obj
- Possible explanation for differences: The addition of supplen assignments that emphasis calculating in square footage and for construction materials.
- Significance for future teaching: To make students aware tha made communicating any numbers to others can result in wa effort, and materials all of which negatively affect the botto

Analysis of objective 3:

- : The average performance rate was 4 for objective 3.
- Average performance rate for last semester was 3.5 for this object
- Possible explanation for differences: Implementing more hands-o using hand and power tools which are a necessity in the constructi and it is important to understand how they work and what they do
- Significance for future teaching: Hand and power tool maintenanc is another subject students need to learn and appreciate. Well-mai tools operate safer and last longer, which protects workers and sav money.

Analysis of objective 4:

- The average performance rate was 4.5 for objective 4.
- The average performance rate for last semester was 3.5 for this ol
- Possible explanation for differences: Additional supplemental as that emphasis architectural and engineering drawings, specificatio building components, materials, and methods of construction.
- Significance for future teaching: A set of construction drawings fo of agreement and understanding that a building will be built as de drawing. Therefore, everyone involved in planning, supplying, an structure should be able to read construction drawings.

Analysis of objective 5:

- The average performance rate was 4.5 for objective 5.
- The average performance rate for last semester was 3.5 for this ob
- Possible explanation for differences: A greater emphasis on comm skills----the ability to read, write, listen, and speak effectively are success in the construction industry. Also the ability to solve prob critical thinking which involves evaluating and using information conclusions or make decisions.
- Significance for future teaching: Students need to learn the import non-technical soft skills they will need in order to be successful as professional.

Analysis of objective 6:

- The average performance rate was 5 for objective 6.
- The average performance rate for last semester was 4.5 for this objectiv
- Possible explanation for differences: A greater emphasis placed on hand performed in construction which involves the handling of some type of load such as wood, brick, lumber, pipe, concrete, or other supplies, on a
- Significance for future teaching: Material handling is one of the most co on a job site, and is also one that can cause accidents or injuries if not d Workers must follow safety procedures for lifting, carrying, and transpo materials, whether doing so manually or using a piece of material handl equipment.

Questions?
Comments?