

# Barstow Community College INSTRUCTIONAL PROGRAM REVIEW

(Refer to the **Program Review Handbook** when completing this form)

PROGRAM:	IMMT/Industrial Maintenance Mechanic Technology					
Academic Year:	2016–2017 FULL PROGRAM REVIEW Date Submitted: 10/01/2017					
Academic Year: 2017-2018 ANNUAL UPDATE Date Submitted:						
By:						
Faculty Lead:	Roland O'Neal, Full time Faculty					
Members:	Brian Packer, Toby Hill Adjuncts, Todd Bartholow Welding/IMMT Faculty					

- 1. Mission and Vision
- 2. Description and Overview
- 3. Program Data
- 4. Curriculum
- 5. Internal Factors
- 6. External Factors
- 7. Continuing Education and Professional Development
- 8. Prior Goals and Objectives
- 9. Action Plan: Goals/Objectives/Actions
- 10. Resources

# 1. Program Mission and Vision

#### A. Program Mission

This program will strive to provide a learning environment conducive to the success of the student to achieve the basic working knowledge in Industrial Maintenance/Electrical and Instrumentation as it is applicable to the progressive nature and technological changes in industry today.

#### B. Program Vision (Where would you like the Program to be three years from now?)

Since Spring 2015 it has provided career and technical education and workforce development programs and courses that have given students the opportunity to obtain NCCER/National Center for Construction, Education and Research credentials, stackable Industry Certifications, as well as obtaining an AS/Associate of Science degree in Industrial Maintenance Electrical and Instrumentation. And to provide a career pathway to Industry for employment opportunities. To date Spring 2017 we have achieved the above success with 2 students acquiring their A/S degrees and Certificates along with NCCER Level I & II Credentials.

C. Describe how mission and vision align with and contribute to the College's Mission and Vision

Offering programs to prepare students in basic skills, career and technical education, lifelong learning opportunities, and comprehensive lower division courses that meet articulation agreements for student to have the opportunity to transfer to upper division and industry leading institutions. Partnering with local agencies, businesses, schools, and military bases to promote positive community skilled work force development and economic growth.

# DATE: October 1, 2017

ANNUAL UPDATE #1: The development of the program has increased to where we have hired two new adjunct faculty members since the spring of 2015, our full time welding instructor is being utilized also as the demand has increased for our con-current enrollment program. Several students have completed the two-year plan and have received their A/S degree and certificates. Of the two students who received their A/S degrees both have been hired by our industry partners (Calportland) and are now currently employed full time. Several other IMMT students have been hired (California steel / USMC etc.) and still attending IMMT classes.

# 2. Program Description and Overview

Assume the reader does not know anything about the Program. Describe the Program, including—but not limited to—the following:

- A. Organization, including staffing and structure
- B. Who do you service (including Demographics)?
- C. What kind of services does your program provide?
- D. How do you provide them?

The IMMT program will provide the student with a broad base of technical skills in IMMT, and an added emphasis in Electrical and Instrumentation with Mechanical Technology and Applications. It will prepare students to enter the maintenance construction field in a variety of trades and positions which include Residential, Commercial and Industrial,

IMMT was birthed in CTE/Career Technical Education to fill an industry shortage in skilled craftsmen and to develop a skilled workforce, this type of training will service all regions and demographics in today's ever changing technical professional environment. This program is led by the dean of CTE and three faculty, one fulltime with 37 years of Industrial Maintenance experience and two part-time Adjunct instructors with over 19 years' experience each. Classes are open to any currently admitted student. Classes are designed with flexibility to accommodate the employed student who desires more training and education, as well as unemployed student learners. The program is also offered through a contract training program where we provide training for incumbent workers.

DATE: October 1, 2017

#### ANNUAL UPDATE #1: Currently we are utilizing our welding/IMMT instructor to fill in because of an increase demand for IMMT training though our con-current enrollment program with BHS. In spring 2016 we hired a new Adjunct to teach Electrical High Voltage sections of the IMMT/ IE curriculum, as a result our electrical program has produced several BCC students who have been hired by our industry partners into their electrical apprenticeship programs. This has given BCC more depth in the IMMT program and serves as an indicator that the program is on track for student success.

# 3. Program Da

### A. PERFORMANCE DATA

Discuss the program's performance on the specific data items listed below:

#### 1) Full-time/Part-Time Faculty Ratio

FT faculty = 1 / 100%, Part-time faculty = 2/50%

#### 2) Course Completion Rate



b) Part-time:			quisites not meet o ne schedule.	or class			
		tir	Data is Combined for full time part time 60, 70 & 80 series 42.93% fill rate.		Not Applicable		
Discussion:	average, with hig	MM&T courses start with the 60 series where the enrollment and completion rates are higher in age, where the 70 and 80 series are more advanced with lower attendance rates (13) average but higher than average completion rates. A total of 9 students were hired by Industry after bleting the 70 and 80 series for spring of 2017.					
	DATE:	October 1, 201	.7				
both Me		both Mechanica	l and Electrical & In ping an advanced 9	strumentation c	npleted the 60, 70 & 80 series programs ourses. As demand has shown we are nce the learning opportunities for our		

- B. Progress on Program Level Outcomes (PLOs) and Student Learning Outcomes
  - 1) Summarize the progress your program has made on program and/or course level SLO measures. (Include *Outcome Statements* in this summary.)

#### **Program Learning Outcomes:**

**1.** The students will be able to identify and demonstrate the proper use of basic industrial maintenance hand and power tools along with electrical test equipment.

The student will be able to identify and install various types of fasteners & anchors, gaskets, pumps and valves commonly used in industrial maintenance. Trouble shoot equipment, estimate quantities, volumes using craft related math, write break down reports and deal with issues in the field of maintenance.
The student will be capable in demonstrating the use of various types of test equipment used in the electrical and instrumentation field. Install and fabricate instrumentation tubing and piping, Trouble shoot and identify resistance, voltage and amperes in an electrical circuit.

- 1.) All student learning outcomes were assessed for each course section taught. We plan to continue to assess each section on a periodical basis and as technology demands for changes in technology. Program outcomes provide the students with a broad base of technical skills in maintenance, with an added emphasis on performance evaluation that will prepare students to enter the maintenance field in a variety of positions such as construction /industrial laborers, helpers, second class and Journeyman. The program strives to encourage students to seek higher education such as in the fields of Engineering.
- 2) Describe any program, course, and/or instructional changes made by your program as a result of the outcomes assessment process.

The IMMT 60 series has a higher enrollment and retention rate as it is the beginning series of the IMM&T program. The 70 series will retain a higher return rate also. The more advance 70A-E and 80A-F series has shown a lower return rate as pre-requisites are not meet, the pre-requisites and other issues will be addressed at the upcoming curriculum meetings. The current curriculum is satisfactory and meets the course needs. I believe as the program progresses the number of students will climb through word of mouth and through outreach, marketing and advertising. I will strive to meet the student's needs in training, personal development and growth and commitment to the program. The IMM&T program has shown success in students who have obtained employment because of the direct outcomes provided through the CTE programs at BCC.

3) Reflecting on the responses for #1 and #2 above, what will you implement for the next assessment cycle?

All PLO's and data from SLOs will be assessed on the course outlines when courses are revised, created and when new material is introduced. IMM&T will be implementing a 90 series classes with an emphasis on new technology and curriculum through NCCER including safety, welding, automotive and other associated fields.

- 1.) From previous years where we had limited internet data access our internet has been upgraded and the use of our Amatrol program has increased through student training. We have obtained more equipment for hands on, other issue will be addressed as industry needs advise.
- 2.) We have seen Internship increases from companies such as California Steel to provide employment and continued education for our students. California steel has advised us that they now will create a new internship for the Industrial maintenance program. They are satisfied with our electrical program and have hired BCC IMM&T I/E students.
- 3.) The IMM&T program updates the course curriculum as new material is released by the NCCER.

DATE:	October 1, 2017
ANNUAL UPDATE #1:	The PLO has been updated to reflect the data gathered for all series of IMM&T, the first program review was mainly focused on the 60 series as that was the only program started in 2015. We have completed a two year cycle in IMM&T. We have acquired New simulators from grant funds to expand the hands on portion of the IMM & E/I training. We added the 70 series course for our Fall 2017 schedule to accommodate the increased demand from BHS and our con-current enrollment.

- C. Supporting Assessment Data (See Handbook for additional information)
  - 1) Provide a list of any additional measures (not included in 3.A.) that you have chosen to gauge your program's effectiveness (e.g.: transfers, degrees, certificates, satisfaction, student contacts, student headcount, Perkin's data, etc.).

With increasing demand from BHS we have added morning classes for the 70 series. To date we have the 60, 70, 70A thru E and the 80A thru F completing a two year cycle. All classes have module tests per chapter of learning followed up by a hands on performance evaluation by a ICTP NCCER approved instructor, resulting in a pass or fail grade for NCCER or third party credentials.

2) Summarize the results of these measures.

Several students have achieved second level credential from NCCER for IMMT & E/I, The Performance Evaluations result in some students not qualifying for credentials through NCCER as the module tests require a 70% or better and an instructor approval when performing the hands on portion, the performance evaluations do not affect the students final class grade, however it does require the student to have actual hands on performance skills. Companies like Calportland have hired several of our IMM&T student to date and have inquired for more to fill openings as they come available.

3) What did you learn from your evaluation of these measures, and what improvements have you implemented, or do you *plan*\*to implement, as a result of your analysis of these measures? (\*List any resources required for planned implementation in #10: Resources.)

Our evaluation process has shown an increased need for skilled IMM&T craftmen, we are also adding a 90 series to our curriculum. Performance Evaluations instill proper safety and usage of Industrial tools and equipment it test the student's ability to apply the learned knowledge along with a performance of the proper application of trouble shooting and repair. This has resulting in challenging, changing or adding higher skill profiles to the performance exam. The student success rate is high with students encouraged to review and retest to meet qualifications to succeed.

4) Include DCP Program Assessment Benchmarks, providing analysis of data on long term goals and objectives.

Through advisory meeting with Manufacturers and Work Force development BCC Industrial Maintenance and other CTE programs are a success for future growth for a skilled work force that will meet long term goals.

DATE:	October 1, 2017
ANNUAL UPDATE #1:	Graduation for May 2017 two of the first co-horts from 2015 start of the IMMT program received both A/S degrees and Certificates in the IMM&T and IMM&T E/I programs, with a third receiving his Certificates only. The two who received A/S degrees were hired by Calportland Cement and are now employed full time. The IMM&T students receive third party credentials from NCCER when successfully passing the module exams and performance evaluations.

#### D. Two-Year Scheduling Plan

1) What is the program's Two-Year Scheduling Plan? What changes, if any, have been made since the last Program Review?

The two year scheduling plan as implemented would take a student from IMM 60 to 80 series with an emphasis on obtaining and A/ S degree in Industrial maintenance or Stackable certificates along with NCCER credentials. The current two year plan is on schedule to meet student needs.

2) How effective has the Two-Year Scheduling Plan been in meeting student needs and educational goals?

With a 96.28% retention rate the program's effectiveness is on track to meet student needs and educational goals along with industry needs and shortcomings through retirement and attrition, 9 students gained employment last semester because of a direct result from being enrolled in the CTE IMM&T program.

3) Reflecting on these results, what are the goals for the next assessment cycle?

To increase the number of students enrolling in the IMM&T programs and graduating with Associates Degrees and Certificates in IMMT/EI field. Implement a new 90 series and an HVAC program along with a pipe welding course.

DATE: October 1, 2017

ANNUAL UPDATE #1: The A/S degrees and certificates where approved through the chancellor's office for the May 2017 graduation. We are currently in the process of developing and Implementing a new 90 series IMM&T and an HVAC program along with a pipe welding course. Through Advisory recommendations this programs are needed in Industry.

# 4. Curriculum

A. List any new courses or program changes since the last program review. Be sure to include any newly approved prerequisites or corequisites.

The IMMT program was new for BCC and started Spring of 2015. To date the program has grown to include the 70 series level II mechanical and the 70 and 80 series level I & II electrical and instrumentation. Since the start we now have two Adjuncts teaching the 70 and 80 series, our full time welding instructor fills in for our 70 series con-current enrollment course.

B. Explain the current evaluation process. How and when was the curriculum last evaluated? *(Appropriateness, archiving, deleting, revising, etc.)* 

The curriculum evaluation process relies on CTE instructor input, PLO and SLO data, program review and curriculum updates from NCCER along with oversight and recommendations from the curriculum committee. We used input from our Advisory meeting to meet curriculum needs.

C. List any courses not in full compliance with Curriculum Committee Standards, including those that have not been updated in the past six years (see <u>Curriculum Manual</u> for additional information, if necessary).

All courses have been in full-compliance at this time. However they are reviewed often to meet changing needs for pre-requisites and recommendations.

D. Curriculum Development: What is the plan for maintaining the currency and viability of your curriculum *(including all modes of delivery)*?

The IMMT program is primarily lecture, lab and hands-on and there are no plans to change mode of delivery at this time. We are presently using the Contren Learning Series developed by NCCER. (National Center for Construction, Education and Research) When new and updated material is released we update our books and any accompanying material as needed for the year.

DATE:	October 1, 2017	
ANNUAL UPDATE #1:		is updated and released from the publisher we update our al can be purchased through the college library and to ester.

#### **5.** Internal Factors (see Handbook for worksheet)

A. Strengths

At present BCC has Qualified Experienced full time Faculty and adjuncts, "high success rates" Well developed curriculum that follows in series for student growth and learning. Support and commitment from the Dean of CTE, VP and President of BCC. We also have a strong working relationship with Industry partners.

B. Weaknesses

Lack of Facilities electrical power, the program needs more support from the main campus staff / counselors and faculty along with marketing, advertising and outreach to inform the general public. The CTE programs need an available ready to use budget for consumables as needed not on a yearly basis only.

DATE:	October 1, 2017
ANNUAL UPDATE #1:	program has been marketed through outreach, manufacturing conferences and through career fair programs along with word of mouth through student interaction. Our Industry partners are hiring BCC IMM&T students and taking advantage of the training programs we
	provide through contract training.

#### 6. External Factors (see Handbook for worksheet)

A. Opportunities

We have an opportunity to increase enrollment by promoting the fact that IMMT can lead to employment or enhance a craftsman's skill to obtain higher wages or employment in the field of maintenance. Through Advisory recommendations and contacts we are adding to our programs to meet industry needs.

B. Threats

State funding short falls, Budget cuts, low student turnout. Instructor burn out new offsite training facilities. Complacence and not improving our trainers and training facility.

DATE:	October 1, 2017	
		nterest in our graduates and our Advisory meetings have a bright future and should be promoted to achieve its

# 7. Continuing Education/Professional Development

A. What continuing education and/or professional development activities have program/unit members participated in during the current cycle?

IMMT instructors regularly attend the Barstow Community College CTE training and curriculum workshops, All CTE instructors are NCCER certified with the IMMT instructor holding a Master Instructor title. Both Adjuncts are industry trained and currently holding maintenance positions With BNSF, NCCER trained and qualified to lead the program.

B. What are the continuing education and/or professional development plans for the upcoming cycle?

As curriculum changes staff will take advantage of workshops, distant learning seminars to develop personal growth and to strengthen our existing workforce as budgets and time permits.

DATE:	October 1, 2017	
ANNUAL UPDATE #1:		ake advantage of workshops, distant learning work and to strengthen our existing workforce as

# 8. Prior Goals/Objectives

Briefly summarize the progress your program/ has made in meeting the goals and objectives identified in the most recent Program Review or Annual Update. (Include measurements of progress or assessment methods.)

The IMMT program was started Spring 2015, our success and retention rates are high allowing the program to grow and add new courses, the fill rate will improve as student meet pre-requisites and academic needs, however more robust media, marketing and recruiting is needed to maintain student enrollment.

DATE:	October 1, 2017
ANNUAL UPDATE #1:	Our con-current enrollment with BHS has allowed us to train and enlist new students to the program, however we need a strong commitment from BHS to ensure future growth
	continues. We may look to other institutions for students in the future. Numbers are great for any program, however quality of students is a must to allow the programs to thrive.

# 9. Goals/Objectives/Actions (ACTION PLAN)

- **A. GOALS:** Formulate Program Goals to maintain or enhance program strengths, or to address identified weaknesses.
- B. ALIGNMENT: Indicate how each Goal is aligned with the College's Strategic Priorities.

- C. OBJECTIVES: Define Objectives for reaching each Goal.
- **D. ACTIONS/TASKS REQUIRED TO ACHIEVE OBJECTIVE:** Create a coherent set of specific steps (Actions/Tasks) that must be taken to achieve each Objective.
- E. OUTCOMES: State intended Outcomes and list appropriate measures and assessment methods for each Outcome.
- F. ADDITIONAL INFORMATION: This area provides for the additional communication of information necessary to further "close the loop" on the goal or action plan, as it relates to Institutional Planning. This may include references to other institutional documents, such as governing or compliance documents (i.e. Board Policy, Administrative Procedures, Title V), institutional planning documents (i.e. <u>Strategic Plan, Educational Master Plan, Facilities Plan, Technology Plan</u>), or Board, Presidential, Supervisory or Departmental recommendations or goals, etc. *(See Handbook for additional examples.)*

Complete the following table with your Program's ACTION PLAN, which must include a minimum of 3 goals:

				AC	TION PLAN				
	GOAL	BCC ST	IGNMENT WITH RATEGIC PRIORITIES for list of Strategic Priorities)		OBJECTIVE		ONS/TASKS REQUIRED ACHIEVE OBJECTIVE		COMES, MEASURES, and ASSESSMENT
#1			could become transferable to attract more Students. With possible course's being offered   - Foster innovative learning environment     - Provide Successful college learning experience		#1 Contact CSU to dete what direction their IM program is heading and they are looking for in r students	MT I what	- Work with dean of CTI update IMMT program curriculum to help the students meet requiren CSU program.		OUTCOMES: To have the students better equippe when entering CSU prog MEASURES: ASSESSMENT: Enrollmen numbers and Class surve why students are taking and where they heard all the program
			- <b>strengtnen</b> college planning/ decision making		# 2 Have counselors, fa and other student cont become more engaged IMMT / CTE departmen activities and goals for s enrollment.	acts in the it	- Outreach to other area campus by attending m when possible or trying alternative methods of discussions if necessary	eetings	OUTCOMES: more stude being informed of IMMT program MEASURES: ASSESSMENT: Enrollmen numbers and Class surve why students are taking and where they heard all the program
					#3 Promote BCC/CTE programs within the community through ou at Manufacturing confe career fairs and through advertising and growth through Advisory recommendations.	erences h	- Work with dean of CTf outreach and Public Information officer to p in amore venues or in n ways	romote	OUTCOMES: More comm acknowledgement of IM program MEASURES: ASSESSMENT: Enrollmen numbers and Class surve why students are taking and where they heard all the program
Additi	onal Information:				·				
DATE:	OCTOBER 1, 2017	ANNUAL				discipline	IT student and automotive e. Based on advisory recon	nmendat	ions.
faciliti	le resources upgrade les infrastructure with learning tools to	- Foster a	<i>that apply:</i> n innovative learning nent ( Amatrol learning )	building	all more power to g and upgrade the t speed and data.		current class schedules date and revise.		

			ACTION PLAN		
	GOAL	ALIGNMENT WITH BCC STRATEGIC PRIORITIES (click link for list of Strategic Priorities)	OBJECTIVE	ACTIONS/TASKS REQUIRED TO ACHIEVE OBJECTIVE	OUTCOMES, MEASURES, and ASSESSMENT
	Facilitate programs and an environment that ensures student success.	ironment that ensures experience - Promote and support student			ASSESSMENT: Enrollment numbers and Class survey on why students are taking class and where they heard about the program
	Additional Information:				
	DATE:	ANNUAL UPDATE #1:			
#3	Actively support and promote local economic growth and community development.	List all that apply: - Foster innovative learning environment - Provide Successful college learning experience - Promote and support student engagement - Cultivate and enhance local partnerships - Attract/develop excellent employees - Strengthen college planning/	#1 Determine the educational and training needs of the community through advisory.	- Work with dean of CTE to outreach at employers to determent their requirement	OUTCOMES: More community acknowledgement of IMMT program MEASURES: ASSESSMENT: Enrollment numbers and Class survey on why students are taking class and where they heard about the program
		decision making	#2 Establish CTE programs that meet educational and training needs of local employers	- Outreach to community and business in the local and sounding areas by attending meetings when possible or trying alternative methods of discussions if necessary.	OUTCOMES: More community acknowledgement of IMMT program MEASURES: ASSESSMENT: Enrollment numbers and Class survey on why students are taking class and where they heard about the program
			#3 Provide career exploration opportunities to college and high school students.	- Work with dean of CTE to outreach and Public Information officer to promote in amore venues or in more ways	OUTCOMES: More community acknowledgement of IMMT program MEASURES: ASSESSMENT: Enrollment numbers and Class survey on

	ACTION PLAN						
	GOAL	ALIGNMENT WITH BCC STRATEGIC PRIORITIES (click link for list of Strategic Priorities)	OBJECTIVE	ACTIONS/TASKS REQUIRED TO ACHIEVE OBJECTIVE	OUTCOMES, MEASURES, and ASSESSMENT		
					why students are taking class and where they heard about the program		
	Additional Information:						
	DATE:	ANNUAL UPDATE #1:					
#4		List all that apply:	#1				
			#2				
			#3				
	Additional Information:						
	DATE:	ANNUAL UPDATE #1:					
#5		List all that apply:	#1				
			#2				
			#3				
	Additional Information:			•			
	DATE:	ANNUAL UPDATE #1:					
#6		List all that apply:	#1				

# 10. Resources Required

List all significant resources needed to achieve the objectives shown in the table above, including personnel, training, technology, information, equipment, supplies, and space. Every request for additional resources must support at least one objective.

Also list any resources required to implement planned improvements noted in 3.C.

**IMPORTANT:** A <u>BUDGET ALLOCATION PROPOSAL</u> must be completed and submitted for **EACH** new resource requested. (*Click the link to access the form.*)

Goal #	Objective #	Resource Required	Estimated Cost	BAP Required? Yes or No	If No, indicate funding source
1	1,2,3	Time and support for outreach. Scheduled meetings with counselors and other key faculty and staff on campus and in the community to discuss issues affecting enrollment, curriculum and class scheduling.	?		
2		Acquiring the proper equipment and consumables to meet curriculum needs.	?		
S		Engage in offsite field trips to local employers and invite guest speakers.	?		
4		CTE must have control of consumable purchases for class room demos and practice training. All IMM&T series will benefit from having supplies on hand.	?		

ANNUAL UPDATE #1:

DATE:

ANNUAL OPDATE #1:		JPDATE #1.	DATE:			
	Goal #	Objective #	Resource Required	Estimated Cost	BAP Required? Yes or No	If No, indicate funding source