HAWAI`I COMMUNITY COLLEGE
ANNUAL
INSTRUCTIONAL PROGRAM REVIEW TEMPLATE

ELECTRONICS

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July 1, 2012 to June 30, 2013

Initiator: Joel Tanabe
Writer(s): Melanie Higa

Program/Unit Review at Hawai'i Community College is a shared governance responsibility related to strategic planning and quality assurance. It is an important planning tool for the college budget process. Achievement of Program/Unit Outcomes is embedded in this ongoing systematic assessment. Reviewed by a college-wide process, the Program/Unit Reviews are available to the college and community at large to enhance communication and public accountability.

CERC Comments and Feedback (If you submitted a Comprehensive Program Review in 2011 or 2012, please complete this section)

CERC gave recommendations intended as suggestions for improvement. Provide a brief response to the suggestions made. i.e. Were suggestion(s) valid? Were change(s) made as a result of the suggestion(s)?

There were many suggestions provided by CERC. There wer numerous s ugeestions that were a result of

Program Description (Use the official description from catalog then give more in depth explanation of what the program does, who it serves and generally describe it's accomplishments)

This program prepares students for employment in telecommunications, medical electronics, computers, and consumer electronics. The electronic technician fabricates, installs, maintains, and repairs electronic equipment.

The program courses cover basic DC and AC component theory and circuit analysis, digital systems, optics and computers and networking. Students applying to the electronics program should have two years of high school math including geometry or algebra, and two years of high school science including chemistry or physics.

Upon completion of the program students will be able to apply to entry-level electronic technician positions as well as entry-level Information Technology positions.

Part I: Quantitative Indicators

NO ENTRY

Part II: Analysis of the Program

Alignment with College Mission and ILOs

Write a brief narrative describing the program and how it supports the College's mission and Institutional Learning Outcomes (ILOs).

College's mission:
Hawai`i Community College (Hawai`iCC) promotes student learning by embracing our unique Hawai`i Island culture and inspiring growth in the spirit of "E `Imi Pono." Aligned with the UH Community Colleges system's mission, we are committed to serving all segments of our Hawai`i Island community.

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Program Mission:
The Electronics Technology Program, in alignment with HawCC's mission, accepts students from all segments of our Hawaiʻi Island community. We strive to develop quality electronic technicians and life long learners.

Describe how this program supports the College's mission.
The Electronics Technology program, in alignment with HawCC's mission, accepts students from all segments of our Hawaiʻi Island community. Without bias or predjudice, each student is expected to think critically and solve problems logically and methodically. In the process of thinking critically and solving problems, students are constantly evaluationing themselves and their abilities and always striving for excellence.

Describe how this program supports the College's Institutional Learning Outcomes below.

ILO 1: Our graduates will be able to communicate effectively in a variety of situations.
Describe how the Program supports ILO1:
The program requires students to learn different software and drafting techniques that are utilized as vehicles to communicate technical information. They are required to know schematic symbols of many of the common electronics components. A schematic diagram drawn by students here in Hawaiʻi can be read and understood by an engineer or electronic technician from Japan or Australia. It is a universal language and a means for communicating technical information.

In addition, many of the labs and projects require students to work in a group. In order for their group to function properly and complete projects in a timely fashion, students must be able to effectively communicate with each other.   By requiring students to change lab partners, they also learn to adapt their communication according to how their partners process information.

In the electronics technology program, students develop their technical communication through schematics drawings and their interpersonal communication through group work. A graduate of the program will essentially be a well-rounded communicator.

ILO 2: Our graduates will be able to gather, evaluate and analyze ideas and information to use in overcoming challenges, solving problems and making decisions.
Describe how this Program supports ILO 2:
The Electronic student learns to design solutions to problems and methodically troubleshoot circuits and other electronic equipment. The art of troubleshooting requires students to be investigative and resourceful. Students have to gather information such as the make and model of the broken equipment or how the equipment was being used when it broke. They need to know what the exact symptoms are and whether it occurs consistently or if it is an intermittent problem. Then they can use resources like the manual or the internet to gather more information. From their investigation, they must decide whether the equipment is worth fixing or not. If the cost of fixing the equipment is more than

purchasing new equipment, then the decision is easy but many times the solution is not obvious and more information and investigation must occur. In trying to fix equipment, students are constantly developing their problem solving skills and decision making skills through hands-on work. Electronics Technology is a very analytical field and this is one of many examples of students overcoming challenges, solving problems and making decisions.

ILO 3: Our graduates will develop the knowledge, skills and values to make contributions to our community in a manner that respects diversity and Hawaiian culture.
Describe how this Program supports ILO 3:
In the program, students come from different backgrounds and cultures. Through team projects and taking courses together, many of the students form close bonds to each other. The students often share with each other their cultural backgrounds, through stories they tell each other, food they bring and share or even the way they speak.   There is always a few students
Although many of the students come from very diverse backgrounds, they all tend to pull together as one unit when the rigors of school work start oto bog them down.

Annual Report of Program Data (ARPD)

Based on the data from this Program's ARPD, analyze this program's strengths and weaknesses in terms of demand, efficiency, and effectiveness.
Overall Health-- Cautionary

Demand -- Unhealthy
The Program rating of Unhealthy is due to the large number of students in the major and low number of New and Replacement Positions.

This Unhealthy rating can be due to the CIP code designated for the program. The CIP code does not encompass all the new and replacement positions in the county that the students from this program are eligible to fill.   Instead, the CIP code narrows the prospective jobs down to a single field which results in a low number for the new and replacement (county prorated) field. The Electronic Technology student at HawCC is trained to fill many types of technician positions such as service technician, entry-level information technologist, communication technician… etc. It is difficult to find one CIP code that is indicative of the programs job prospects especially in the Hilo County. The field is very broad and could fall under many CIP codes.

Efficency -- Cautionary
The program is given a Fill Rate of 42% which is an unhealthy level and the Majors to FTE BOR Appointed Faculty are 13 which is a cautionary level. The average of the two numbers put the program at a cautionary level.

The low fill rate is due to the student enrollment being less than the maximum enrollment. Previous to the fall of 2012 the program had stopped taking new enrollment and started up again last fall 2012. In that first semester, the program enrollment was at 5 full-time students. In the fall of 2013 the enrollment increased by 4 for a total of 9 full-time students. The enrollment grew 80% in 1 year. If the upward trend continues, the fill rate level should become higher.

The Majors to FTE BOR Appointed Faculty is a cautionary level but should also increase in to the upper end of the cautionary level as the enrollment numbers increase.

Effectiveness -- Cautionary
The effectiveness indicators are based upon the average category health score of two fields, the persistence from fall to spring and unduplicated degrees/certificates awarded. The persistence from fall spring was given a healthy rating with a 72.7% persistence rate.

The program was given an unhealthy rating for unduplicated degrees/certificates awarded with a score of 5. The effectiveness indicator is the average of the two fields which resulted in a cautionary health indicator.

The unhealthy rating is again dependent on the new and replacement positions for the county which is low due to the CIP code designated for the program. As mentioned previously, the CIP code does not encompass all the new and replacement positions in the county that the students from this program are eligible to fill.

Distance Education: Completely On-Line Classes
If applicable, based on the data on Distance Education (DE) from this Program's ARPD, analyze this program's strengths and weaknesses in terms of its DE offerings. Include future plans (i.e. will increase/decrease offerings; CARP 100 was not effective online, will try CARP 101 instead; increase professional development for faculty).
The program does not offer distance education courses.

Perkins IV Core Indicators
If applicable, provide an analysis for any Perkin's Core Indicator for which this program did not meet the goal.
The program did not meet 2P1 and and 3P1 Perkins Indicator. Electronics Technology is one of the more math rigorous programs. The first year is very math intensive and requires a high-level of critical thinking and problem-solving skills. Students that are not at the proper math level when they enter the program will struggle. Many of them end up dropping out after the first year. The current action is to raise the math level. This is the first year that students are required to test into math 100 or higher. In previous years, students were only required to test into math 66. With this new math requirement,

incoming students will have the math background to successfully complete the degree program. This should help increase the number of students pursue their degree/credentials/certificate and student retention.

Nontraditional participation (5P1) was below the performance goal. Our actual 5P1 indicator was 1.6% off the goal. We are currently looking into recruiting women into the field through a program called Women Tech Educators.

Performance Funding

Briefly describe initiatives/strategies that this program has or will implement to increase any or all of the Performance Funding outcomes.

Previous Program Actions

From the Academic Master Plan (AMP), list the Program Actions for this program. Give a progress report for each Program Action, describe the degree of achievement. Indicate "Delete" if this Program Action will no longer be a priority Program Action

Program Actions	Progress Evaluation
Acquire proper equipment and workbenches so students may run labs without having to deal with test equipment malfunctions	Developing the Electronics Technology program required proper test equipment and workbenches. We have acquired enough test equipment to perform labs with up to 15 students. The workbenches are not electronics workbenches, they are workbenches from RAC they will suffice for the time being but we need to supply proper lighting for the benches.
Align program to mirror UH Maui's AS program to facilitate student transfer into UH Maui's BAS program	Delete. UHMCC has a terminal Computer technology BAS program. It is a terminal degree because the program is not an engineering accredited program.
Build a strong advisory council team that can help guide the program in a direction that will fulfill community needs	The advisory council has been updated. We now have a representative from West Hawaiʻi and also from HELCO and

Significant Program Actions for 2012-2013. (include curriculum changes, new certificates, stopout, gain/loss of positions)

1. Added Math 100 and English 100 to curriculum
2.
3.

Analysis of Strengths and Weaknesses

Briefly describe this program's top 3 strengths and 3 weaknesses. Provide an explanation <u>and</u> supporting evidence for each strength and weakness (e.g. assessment results, data elements from ARPD, surveys, etc.)

Strengths	Using supporting evidence, describe why this is a strength
S1. Optimistic job market	The 2010 Comprehensive Economic Development Strategy (CEDS) states that one of the strengths of the science and technology field in Hawai'i is that Numerous technology companies have recently been established including and not limited to Liquid Robotics, Inc. (Wave Glider CO2 and Ocean Acidification Observation Program) and Big Island Carbon (production of premium grade, granular activated carbon from macadamia nut shells). In addition the 2010 CEDS listed the entire priority projects list for science and technology from 2010-2013. Project ID number SC106 is a small business program which support science and technology businesses in Hawai'i County. Also a relevant to our program is the long-term projects SC108 and SC109. SC108 is a project to improve existing and install new infrastructure to support astronomy/observatory industry on Mauna Kea. SC109 is a project island-wide project to plan, design and implement broadband capabilities. This particular project is estimated to have a budget of $80,000,000. All of these projects is indicative of a growing industry and leads to an optimistic job market for graduates of the program whether they decide to start their own business or seek employment from private or public sector.
S2. Growing interest in STEM fields	Electronics Technology is in the category of Science Technology Engineering and Mathematics (STEM). The interest in STEM fields such as electronics technology has gained momentum over the past few years and this is exemplified in our youth with the growing interest in

	robotics at the local high schools.

In addition, the electronics program has grown 80% since the fall 2012 to the fall 2013. Many of the students currently interested in the program either come from other trades programs or have in interest in fixing their own devices. The students that come from other trades find electronic useful because all the machines and tools they use integrate some sort of electronics in them. This makes the courses more relevant to their trade.

The up and coming youth are showing much interest in STEM programs such as electronics which is a strength all fields in STEM areas. |
| S3. Engineering Consortium meetings | Over the past few years, there have been several Engineering consortium meetings with the 4 year colleges and the community colleges from the neighbor islands. The progress is slow but there is still talk of how we can align our programs. The consortium meetings also focus in on underrepresented students and how to gain their interest in technology fields. |

Weaknesses	**Using supporting evidence, describe why this is a Weakness**
W1. Insufficient Ventilation	The facility's existing square footage does not provide for an efficient working space for students, especially in the non-air-conditioned lab. During lab, the jalousies and the bay door are opened fully for maximum ventilation to dilute solder fumes from vehicles passing by the shop. The electronics lab has components that breakdown due to high humidity and extreme temperatures.
W2. Finding Qualified Instructors	The program is taking in new students every fall. It is not possible for one instructor to manage first and second year students. We rely heavily on lecturers to help teach some of the courses. The task of recruiting qualified lecturers is not a trivial task. There are very few applicants in the lecturer pool. Every semester, it is a constant struggle to find people qualified to teach courses. We have reached out to the UH campus lecturers, math department at HCC and also connecting with people in the industry. People working full-time jobs are often reluctant to lecture part-time.
W3. Classroom is not able to	The classroom does not have enough desk space to

accommodate the maximum enrollment	accommodate the maximum number of students. Currently, we are able to seat 8 students comfortably and 10 when we use a folding table. The maximum enrollment for the program is 10 students. The best way to mitigate this classroom space issue is to reduce the computer lab area. The lab area uses desktop computers which require more space then necessary.

Trends and Other Factors

Describe trends including comparisons to any applicable standards, such as college, program, or national standards from accrediting associations, etc. Include, if relevant, a summary of Satisfaction Survey Results, special studies and/or instruments used, e.g., CCSSE, etc. Describe any external factors affecting this program or additional program changes not included elsewhere.

Nothing to report at this time.

Part III: Action Plan

Goals and Planning

List additional Program Action(s), not included in the AMP to be implemented for program success. Identify the AMP Priorities, College's ILOs, Strategic Plan Action Strategies, and UH System collaboration (if applicable) to which these Program Action(s) align.

Program Action 1		ILO Alignment (select up to 3)	Strategic Plan Alignment (select best alignment; max 3)		UH System Collaboration
			Performance Measure	Action Strategy	
Modify program so that it is relevant to community needs	Program Developme	ILO 2	B.1	a.	
	Graduation	ILO 1	A1.1	New Strategy	
	Graduation	ILO 1	A1.1	New Strategy	

Link to Hawaii Community College Institutional Learning Outcomes
Link to Hawaiʻi Community College Strategic Plan
Link to Hawaii Community College Academic Master Plan

Narrative of New Strategy for Strategic Plan:

1. One of the challenging tasks of running a program such as electronics is staying up to date and keeping the program relevant to the Hawaiʻi Community. The program needs to focus on strategic recruitment. Student that attend trade schools are generally interested in learning a trade and then

working in the field. They often inquire about the type of work available to them when they graduate. The observatories are an obvious candidate but there are also places such as AT&T, Timewarner Oceanic and various other small businesses. The new strategic plan is not a task that can be carried out in one year but it is an ongoing process. The field changes so rapidly that the survival of the program is dependant on staying up to date and relevant to the community needs. Data will have to be collected from various companies and employers to define their needs and how our students can fill that need.	
2.	
3.	

Briefly explain how **Program Action 1** aligns to the College's AMP Priorities, ILOs, Strategic Plan, and UH System collaboration (if applicable):

This strategy aligns with AMP 14.3, "Build a strong advisory council team that can help guide the program in a direction that will fulfill community needs". In order to carry out the new strategy, it will rely heavily on having an advisory council that is up to date with new trends and future trends.
ILO 2 states, "Our graduates will be able to gather evaluate and analyze ideas and information to use in overcoming challenges, solving problems and making decisions." The new strategy aligns with ILO 2 by providing students with the proper basic knowledge, they will be able to think critically and solve problems. If students are provided a good knowledge and work attitude prior to working, they will thrive in any field they work. In meeting with the community businesses and advisory council, we will be able to provide students with a strong knowledge base so they can overcome challenges, solve problems and make decisions when they enter the workforce.
Strategic plan B1.a states, "Use enrollment data to focus on strategic recruitment, retention, graduation and transfer." Data gathered from past, present and future students will give us an idea of where students are coming from and where they go when they graduate. It can also provide us information on why they entered the program which will help retention rates. The primary focus is on strategic recruitment which means we have to know what is motivated each student to enroll in the class. When we have an understanding of our students we can create a program that brings in new enrollment and fits the needs of the community.

Calendar of planned activities for **Program Action 1** – In chronological order, briefly describe the procedures/activities planned to achieve **Program Action 1**

Activity(ies)	When will the activity take place

Example:
    Nursery design development
    Shade replacement
    Irrigation design and installation
	
	 September 2014
	 Fall 2014
	 Spring 2015

Meet with Advisory Council	February 13, 2014
make changes to curriculum	May 2014
Try to establish contacts from other industries (sears repair, timewarner oceanic, AT&T…etc.)	on going

Program Action 2		**ILO Alignment** (select up to 3)	**Strategic Plan Alignment** (select best alignment; max 3)		**UH System Collaboration**
			Performance Measure	Action Strategy	
	Graduation	ILO 1	A1.1	New Strategy	
	Graduation	ILO 1	A1.1	New Strategy	
	Graduation	ILO 1	A1.1	New Strategy	

Narrative of New Action Strategy for Strategic Plan:

1.
2.
3.

Briefly explain how **Program Action 2** aligns to the College's AMP Priorities, ILOs, Strategic Plan, and UH System collaboration (if applicable):

Calendar of planned activities for **Program Action 2** – In chronological order, briefly describe the procedures/activities planned to achieve **Program Action 2**

Activity	**When will the activity take place**

Program Action 3		**ILO Alignment** (select up to 3)	**Strategic Plan Alignment** (select best alignment; max 3)		**UH System Collaboration**
			Performance Measure	Action Strategy	
	Graduation	ILO 1	A1.1	New Strategy	
	Graduation	ILO 1	A1.1	New Strategy	
	Graduation	ILO 1	A1.1	New Strategy	

Narrative of New Strategy for Strategic Plan:

1.
2.
3.

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Briefly explain how **Program Action 3** aligns to the College's AMP Priorities, ILOs, Strategic Plan, and UH System collaboration (if applicable):

Calendar of planned activities for **Program Action 3** – In chronological order, briefly describe the procedures/activities planned to achieve **Program Action 3**

Activity	When will the activity take place

List specific action plans for any Perkin's Core Indicator for which this program did not meet the goal.

Perkin's Indicator	Action Plans	When will the activity take place
2P1	Electronics Technology is one of the more math rigorous programs. The first year is very math intensive and requires a high-level of critical thinking and problem-solving skills. Students that are not at the proper math level when they enter the program will struggle. Many of them end up dropping out after the first year. The current action is to raise the math level. This is the first year that students are required to test into math 100 or higher. In previous years, students were only required to test into math 66. With this new math requirement, incoming students will have the math background to successfully complete the degree program.	The activity is currently taking place.
3P1	Electronics Technology is one of the more math rigorous programs. The first year is very math intensive and requires a high-level of critical thinking and problem-solving skills. Students that are not at the proper math level when they enter the program will struggle. Many of them end up dropping out after the first year. The current action is to raise the math level. This is the first year that students are required to test into math	The activity is currently taking place

	100 or higher. In previous years, students were only required to test into math 66. With this new math requirement, incoming students will have the math background to successfully complete the degree program.	
5P1	The nontraditional participation is 1.6% off the goal. We are currently looking into recruiting women into the field through a program called Women Tech Educators.	There is no exact date set at this time
1P1		
1P1		
1P1		

Part IV: Resource Implications

List Top 3 Cost Items needed for program success. Identify alignment to the AMP Program Actions, Strategic Plan Action Strategies and/or Strengths and/or Weaknesses to address.

Cost Item 1	Type	Cost	Strategic Plan Alignment (select best alignment; max 3)		Academic Master Plan Alignment (select best alignment; max 3)	Strength	Weakness
				Action Strategy	Program Action from AMP (ie 4.3) or write "New Strategy"	From Part II above	From Part II above
Proper cooling/ventilation in the lab.	Equipmen	$50k	E.1	b.	AMP 14.1	None	W1
			A1.1	New Strategy		S1	W1
			A1.1	New Strategy		S1	W1

Link to Hawaii Community College Institutional Learning Outcomes
Link to Hawaiʻi Community College Strategic Plan
Link to Hawaii Community College Academic Master Plan

Briefly explain why **Cost Item 1** is necessary to meet priorities of program and/or to address strengths and/or weaknesses.

The laboratory space for electronics should have proper ventilation and temperature control. The electronic components need to be kept in a temperature controlled space so that they do not break down over time as quickly over time. Also, the solder stations should have better ventilation so students are not breathing in the fumes. We use lead free solder but there should still be proper ventilation. We also need proper ventilation for solder iron fumes. The facility's existing square footage does not provide for an efficient working space for students, especially in the non-air-conditioned lab. During lab, the jalousies and the bay door are opened fully for maximum ventilation to dilute solder fumes from

vehicles passing by the shop.

Cost Item 2	Type	Cost	Strategic Plan Alignment (select best alignment; max 3)		Academic Master Plan Alignment (select best alignment; max 3)	Strength	Weakness
				Action Strategy	Program Action from AMP (ie 4.3) or write "New Strategy"	From Part II above	From Part II above
Laboratory benches	Equipmen	$20k	E.1	a.	AMP 14.1	None	W3
			A1.1	New Strategy		S1	W1
			A1.1	New Strategy		S1	W1

Briefly explain why **Cost Item 2** is necessary to meet priorities of program and/or to address strengths and/or weaknesses.

The classroom does not have enough desk space to accommodate the maximum number of students. Currently, we are able to seat 8 students comfortably and 10 when we use a folding table. The maximum enrollment for the program is 10 students. The best way to mitigate this classroom space issue is to reduce the computer lab area. The lab area uses desktop computers which require more space then necessary.

Cost Item 3	Type	Cost	Strategic Plan Alignment (select best alignment; max 3)		Academic Master Plan Alignment (select best alignment; max 3)	Strength	Weakness
				Action Strategy	Program Action from AMP (ie 4.3) or write "New Strategy"	From Part II above	From Part II above
Classroom supplies: Printer, projector, projector screen, white boards, smart boards	Equipmen	$5k	E.1	a.	AMP 14.1	None	W3
			A1.1	New Strategy		S1	W1
			A1.1	New Strategy		S1	W1

Briefly explain why **Cost Item 3** is necessary to meet priorities of program and/or to address strengths and/or weaknesses.

The classroom needs an equipment update. The printer in the classroom works intermittently and the TV screens used for powerpoint lessons are slowing dying. The program should replace these items before they do not work at all. With the new students cycling in every fall, equipment has more and more wear and tear.

Part V: Program Student Learning Outcomes

List the Program Learning Outcomes and check mark those assessed for the 2012-2013 program year.

	Check mark if Assessed this year	Program Student Learning Outcomes
1	☐	Use engineering designs to implement electronic systems
2	☒	Apply knowledge of computer systems
3	☐	Develop a fundamental understanding of basic electronics
4	☐	Use effective communication in a team environment
5	☐	Demonstrate leadership and management skills to effectively complete a project
6	☒	Practice work ethics and personal discipline to succeed in a professional environment
7	☐	Develop life-long learning skills to maintain and improve technical abilities
8	☐	
9	☐	
10	☐	

A) **Evidence of Industry Validation for CTE Programs** – Provide documentation that the program has submitted evidence and achieved certification or accreditation from an organization granting certification in an industry or profession. If the program/degree/certificate does not have a certifying body, the recommendations for, approval of, and/or participation in, assessment by the program's advisory council can be submitted. – Describe the documentation; i.e. 9/27/2013 Minutes of ACC Advisory Council; Completed Rubrics by Advisory Council Members.
NA

B) **Expected Level of Achievement** – Describe the different levels of achievement for each characteristic of the learning outcome(s) that were assessed. What represented "excellent," "good," "fair," or "poor" performance using a defined rubric and what percentages were set as goals for student success; i.e. 85% of students will achieve good or excellent in the assessed activity."
NA

C) **List Course(s) Assessed** – List the courses assessed during the reporting period.
ETRO 122L

D) **Assessment Strategy/Instrument** – Describe what, why, where, when, and from whom assessment artifacts were collected.

Two SLO's were assessed for 2012-2013. The SLO's assessed are as follows:

1. Demonstrate the operation of optoelectronic devices i.e. LEDs, photodiodes, photocells..etc.

2. Work in teams to complete lab assignments

Assessment of SLO 1 was done through testing. An example of the test question is provided below:

 Circuit Design (10pts)

Note: Specification sheet shown in problem could not be imported to this document.

You are asked to design a simple series LED circuit. The specification sheet for the LED is shown above. In order for the LED to run at its most optimal conditions, we want it to run in forward voltage. We will be using a 9V battery as the power source. Draw the schematic design of the circuit with all components properly labeled with values. Show all your work for partial credit.

Assessment of SLO 2 was administered through a team assignment. Their assignment was to develop a bicycle light that automatically turns on at night. The students turned in a final report as well as a final product.   The project is also an assessment of SLO 1 because the assignment involved a photoresistor and an LED which are both optoelectronic devices.

E) **Results of Program Assessment** – The % of students who met the outcome(s) and at what level they met the outcome(s).

Results of SLO 1 are shown below

_____

	Student 1	Student 2	Student 3	Student 4	Student 5	TOTALS
RAW SCORE	9.00	8.00	7.50	6.50	7.00	7.60
PERCENTAGE	90.00%	80.00%	75.00%	65.00%	70.00%	76.00%

_____

Results of SLO 2 were assessed using a rubric. The students all assessed their teammates and that score was averaged into the instructor assessment of the team.   The average grade was 85%. The Rubric can be provided upon request.

For SLO 1 were were slightly below our goal of 85% and for SLO 2 we just met our goal.

F) **Other Comments** – Include any information that will clarify the assessment process report.

G) **Next Steps** – Describe what the program will do to improve the results. "Next Steps" can include revision to syllabi, curriculum, teaching methods, student support, and other options.
The program will work on developing students ability to properly read specification sheets and interpret what their reading. This is where most of the students had trouble. They may have had the ability to answer the question but they did not possess the ability to interpret the specification sheet.
The teamwork skills met our goals but this may not be the case for larger classes. Our data is based on 5 students which is not a very large sample set. New data drawn from larger classes may result in lower percentages. We will re-assess this SLO within the next five years.