



## Annual Assessment Update

<http://www.caspercollege.edu/assessment/index.html>

**Purpose:** The purpose of the *Program Annual Assessment Update* is to provide information about progress in assessment efforts for each program within your department. Only one report is requested of each department, as this update will accommodate multiple degree plans. (You can still submit separate reports if you prefer.) The report will be made available <http://www.caspercollege.edu/assessment/index.html>. It is recommended that your department use your assessment update and results to *celebrate achievements of student learning* as well as to *identify potential areas for future curriculum improvement*.

Please email this completed form as an attachment to [kthatcher@caspercollege.edu](mailto:kthatcher@caspercollege.edu).

### CONTACT INFO:

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|-------------------------------------|--|
| 1. Degree Program(s) reported here: | Electronics Technology AAS<br>Certificates: Computer Electronics<br>Industrial Electronics |
| 2. Department:                      | Electronics Technology   |
| 3. School:                          | Business and Industry  |
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| 6. Date Submitted:                  | February 9, 2011   |
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### ASSESSMENT UPDATE:

**Instructions:** Please answer the following **five** questions to the best of your ability for each degree program offered within your department or *you may use the table provided on the next page*.

- Summarize your **assessment activities** during the past year for each degree program. (*e.g. faculty discussions, new survey design, data collection, revised assessment plans or learning outcomes, etc.*).

During the 2009-2010 academic year, the Electronics Department discussed changes to be made in the Electronics programs assessment process. The changes decided upon are:

- Combine the goals for the AAS degree and the two certificates to make the assessment process easier.
  - Revise the Electronics Data Matrix, on both classes that are analyzed and on the data collected from these classes. This will make the assessment process more accurate and reflect what skills that the electronics graduates need for employment.
- Describe specific **assessment findings** related to the **learning outcomes** assessed for each degree program, including any pertinent context surrounding the findings. Please include the **learning**

**outcomes themselves.** (e.g. 77% of students performed at the “proficient” level of competency in problem solving, which is where we aimed to be this year using a new scoring rubric...)

### **Electronics Technology Program**

Data for the assessment plan will be collected and analyzed on a yearly basis and used to modify and improve the courses and equipment needs in the electronics program

#### **A. Employment Statistics:**

Goal A: 80% of students who graduate from the electronics and robotics programs are able to find employment in the electronics field, a related field, or are pursuing an advanced degree.

2009 – 2010 Electronics Graduates: 4

Employed Graduates: 4

#### **Employment analysis:**

##### 1. 2009-2010 school year

100% (4students) of the graduates were employed in an electronics related field.

#### **B. Employer Survey:**

Goal A: 80% of employers responding to a survey are satisfied with the knowledge and skills of the graduates of the electronics and robotics programs.

A satisfactory result for this survey is a score of good or excellent. Of the employers surveyed during the 2009-2010 Advisory Board Meeting, all rated the quality of the graduates that they had hired as average (14%), good (28%), or excellent (58%), which results in an 86% satisfactory rating for graduates working in the electronics field.

#### **Electronics Employer and Advisory Board Survey Results:**

##### 1. Future demand for associate degree-level electronic technicians in your industry.

Average = 1 (14%)

Good = 6 (86%)

##### 2. Appropriateness of CC Electronics course content to meet this demand.

Average = 1 (14%)

Good = 3 (43%)

Excellent = 3 (43%)

3. Timelines of CC Electronics course content compared to present industry “state-of art”.
  - Average = 1 (14%)
  - Good = 2 (28%)
  - Excellent = 3 (43%)
  - Do not know = 1 (14%)
  
4. Overall availability and condition of laboratory facilities to meet the above course requirements.
  - Average = 1 (14%)
  - Good = 2 (28%)
  - Excellent = 3 (43%)
  - Do not know = 1 (14%)
  
5. Satisfaction with performance of CC Electronic graduates on the job.
  - Average = 1 (14%)
  - Good = 2 (28%)
  - Excellent = 4 (58%)
  
6. Suggested program improvements for the next 5 years.
  - a. More focused training on Fire Alarms, Security CCTV, and Nurse Call. We would like to partner with Casper College to train in these areas.
  - b. Technical writing skills are a critical component of my work environment. Instead of PLC’s, we utilize data loggers for out control and measurement systems.
  - c. Is there a technical writing course?
  - d. Technical writing course availability. MPEG 2 and 4 training, including encoding and compression techniques.
  - e. Process control basics and computer networking for industrial controllers are two things I can see a need for. You have always supported our needs a D.J.P.P. If corporate will let me, I hope to start a couple of trainees next year (a big IF).
  - f. Communications interfacing to devices is very important. Modbus, Hart, Fieldbus, and Profibus are some that we work with.

#### Analysis of Results:

1. Over all, on three of the five survey question, the Electronics program was rated at an 86% approval rating by the advisory board members. Approval rating equals a good and excellent rating by the advisory board.

2. In two areas, question 3 and question 4, the electronics Department received a 71% approval rating.
  - a. This is less than the 80% required for these two areas. This rating may be the result that one of the advisory board members (Do not know rating) was a substitute for a traditional member who was out of town at the time.
  - b. It also means that the Electronics Department needs to do a better job of communication with the advisory board and needs to update some of its equipment.
3. Areas where the Electronic Advisory Board suggested that course content needs to be improved are the areas of writing skills and electronic security systems.
  - a. The advisory board suggested that the electronics students take a technical report writing class.
  - b. One advisory board member would like to see more emphasis on security and alarm systems.
    - This area is currently being addressed in ELTR 2870 Machine Vision and Security Systems course. Mr. Arndt will work with Randy Evans of API Systems Integrators to improve the area of security systems in this course.
  - c. Areas of equipment needs for electronic courses are; (1) new power supplies, (2) new oscilloscopes, (3) new fusion splicer, (4) new Optical Time Domain Reflectometer, and (5) new power meters.

C. Electronics Technology Departmental Matrix, 2009-2010:

Goal B: 70% of the graduates of the electronics and robotics programs will obtain a satisfactory rating on the electronics matrix. A satisfactory result for this survey is a score of good or excellent.

Analysis of Electronics Matrix Data:

1. The results of the Electronic Department Matrix indicates that 70% of the electronic students for the 2009 – 2010 school year were rated as satisfactory on their knowledge of electronics and their skills in electronics.
2. It also indicates that there is room for improvement in both the knowledge and skills areas for the electronic students, with 24% of the electronic students with an unsatisfactory rating.
3. The withdrawal rate is 6%, which is about average for this program.

- These results indicate that the Electronics Department should do more to retain students in the electronics program. Also, the Electronics Department needs to improve its recruiting efforts to bring in more entry level students.

Knowledge/Skill	Indicator	Very Poor	Average	Good	Excellent	Withdrawn	Total Students
<b>Computer Circuitry and Programming</b>	ELTR 1770 Final Grade		1		2		3
<b>Computer Hardware and Connectivity</b>	ELTR 2920 Test 3	1		4	5		10
<b>Industrial Applications</b>	ELTR 2925 Test 4		1	4	5	1	11
	ELTR 2870 Final Grade		1	4	1	1	7
	ELTR 1535 Test 2	5	6	8	10	2	31
	ELTR 2815 Test 3	2			12	2	16
<b>Testing</b>	ELTR 1620 Practical Test	4	3	7	12		26
	ELTR 1700 Practical Test		2		1		3
<b>Student Subtotal</b>		12	14	27	48	6	107
<b>Percent</b>		11%	13%	25%	45%	6%	100%

3. Describe how assessment **feedback** has been provided to students, faculty, and staff. (*e.g. report for faculty, executive summary for the dean, web page for students, alumni newsletter, discussion with students in class or club event, etc.*)

The faculty of the Electronics program will all receive a copy of the assessment report for their review. The assessment report will be discussed during Electronic Departmental meetings. A copy of the Electronics program assessment is sent to the Dean of the School of Business and Industry and forwarded onto the Vice President of Academic Affairs and assessment coordinator. At this time there is no feedback to students, but there will be a link on the Electronic Department web page to the online assessment report in the future.

4. In what ways have you **used assessment findings** to celebrate student achievements and/or to improve the curriculum this past year? (*e.g. prizes to students, hosting student parties, changes to curriculum, student projects, learning goals, assessment strategies, etc.*)

The assessment findings have been used to change the course curriculum and to update equipment for several classes. The courses that were affected are:

ELTR 1770 Microprocessor Fundamentals: Updated Lab equipment and changed the programming language to C++.

ELTR 2610 Advanced Microprocessors: Modified the curriculum and updated course equipment.

ELTR 2870 Machine Vision and Security Systems: Updated the curriculum to include more theory on security and alarm systems, and updated the lab equipment to include more security and alary systems.

5. Describe any changes to your assessment plans, or any challenges or educational experiences with the **assessment process** this past year that you would like to share.

Other than some minor changes to the goals and the data collection matrix, there were very few changes in the assessment plan for the Electronics program.