

**CENTRAL NEW MEXICO COMMUNITY COLLEGE**  
**ASSESSMENT REPORT**  
*Due to SAAC by September 30*

**PART 1: CONTACT & PROGRAM IDENTIFICATION**

Report Year and Contact Information:			
2013 - 2014	Kambiz Shahroudi	kshahroudi@cnm.edu	505-224-4000 ext 50422
<b>Academic Year</b>	<b>Contact Person</b>	<b>Email</b>	<b>Phone Number</b>

Subject of this Assessment Report:		
<b>Program:</b> Advanced Systems Technology <input type="checkbox"/> Certificate <input type="checkbox"/> AA <input type="checkbox"/> AS <input checked="" type="checkbox"/> AAS	<b>Gen Ed Area:</b> Math, English, Comp. Lit. Applicable to: <input type="checkbox"/> AA/AS <input checked="" type="checkbox"/> AAS	<b>Discipline Area:</b> Photonics/Laser Technology, MEMS

**PART 2: EVIDENCE OF ACHIEVEMENT OF PROGRAM OUTCOMES**

Summary of Program Success in Achieving Desired Outcomes:
Communication skills, analytical and computational skills, work skills, safe use of equipment, computer soft and hard skills, use of technology demonstrated.

Description and Evaluation of Recent Changes Made in Support of Student Learning:
The use of and safe handling of high powered lasers (Class IV) and solving optics problems with them was demonstrated by students. Students designed, and manufactured micro pressure sensors in the cleanroom.

**PART 3: REPORT ON RECENT ASSESSMENT OF STUDENT LEARNING PROCESSES**

Learning Outcome(s)/Exit Competencies Assessed:	Classes/Cohorts Assessed:
<i>To add rows: right-click in cell below and select "Insert," "Insert Rows Above"</i> Students will correctly identify, explain the operation of, and provide applications of course-specific laser theory, MEMs theory, and systems in the following circuit category types: analog, digital, industrial, and electro/optics communications.	Capstone Students

Students will adequately demonstrate the ability to properly and safely use of Class IV lasers and high voltage equipment for measurement and applied projects. Students work safely with hazardous chemicals in cleanroom environment. Students determined MPE's and calculated NHZ's for high powered lasers.	Capstone Students
Students will demonstrate the ability to read, interpret, create, and utilize schematic diagrams for photonics setups, and used charts and graphs for MEMs processes purposes.	Capstone Students
Students will demonstrate essential employment-seeking and workplace skills for a technical/customer-oriented work environment, such as periodic timely progress reports and presentations, and wrote resume and practiced job interviews.	Capstone Students
Students will have the attitude, abilities, and skills for adapting to rapidly changing technologies.	Capstone Students

Measurement Tool(s) Used:	Enter X's for type of tool				Initial Achievement Target or Expectation:
	Internal	External	Direct	Indirect	
<i>To add rows: right-click in cell below and select "Insert," "Insert Rows Above"</i>					
Final Report, Presentation, Project design, build and demo	X				Final Reports = 100%   Presentations = 100%   Projects = 100%

Assessment Results/Findings:
Final Reports = 90%                      Presentations = 100%                      Projects = 80%

Analysis and Interpretation of Assessment Results/Findings:
<p><b>Results:</b> Technology and equipment use demonstrated, research, communication, and soft skills demonstrated. Computation and analysis skills demonstrated.</p> <p><b>Findings:</b> Simple Math skills are weak. Reading and writing skills are weak. Organizational, and time management skills needs improvement. Direction following was lacking. Design, implementation, maintaining and troubleshooting demonstrated.</p>

**Action Plan in Support of Student Learning:**

More critical thinking, basic math skills, basic reading and writing skills, research, problem solving curriculum needs to be added to background education of the students so that they can be successful in this discipline.

**Recommendations, Proposals, and/or Funding Requests:**

Every course should have a project where research, critical thinking, basic math skills, reading writing skills, computer skills, and troubleshooting methods are used.

Materials for these projects need to purchased, but current components, equipment, and tools need to be evaluated, updated, disposed, as necessary.

**PART 4: EMBEDDED OUTCOMES****Critical Thinking and Life Skills/Teamwork Development within Programs:**

- a) Please describe how Critical Thinking assessment is embedded within your program assessment.
- b) Please describe how Life Skills/Teamwork assessment is embedded within your program assessment.

a) Labs and projects are given to the students with only hints on how they are to be designed, implemented, tested and maintained.

b) Experiments, Reports, and presentations done with research, and teams.

**PART 5: ASSESSMENT CYCLE PLAN (Copy and paste from original plan if unchanged)****Plan Description:**

To assess all student outcomes during the final course in the AST program.

<b>Student Learning Outcomes/Exit Competencies:</b>	<b>When Measured:</b>	<b>Where Measured:</b>	<b>How Measured:</b>
1. Students will correctly identify, explain the operation of, and provide applications of course-specific laser theory, optical science principles and methods, electronic theory, circuitry, and systems in the following circuit category types: analog, digital, industrial, and electronic communications, MEMs, and photonics.	(Capstone)	Internal	Final Report, Presentation, Project design, build and demo

2. Students will adequately demonstrate the ability to properly and safely use Class IV high powered lasers, fiber lasers, optical semiconductor detectors basic electronic test equipment for measurement and troubleshooting purposes.	(Capstone)	Internal	Final Report, Presentation, Project design, build and demo
3. Students will demonstrate the ability to read, interpret, create, and utilize schematic diagrams for optical systems and MEMs manufacturing and troubleshooting and design of experiments and statistical analysis purposes	(Capstone)	Internal	Final Report, Presentation, Project design, build and demo
4. Students will demonstrate essential employment-seeking and workplace skills for a technical/customer-oriented work environment, such as research labs or manufacturing settings by progress reports and presentations.	(Capstone)	Internal	Final Report, Presentation, Project design, build and demo
5. Students will have the attitude, abilities, and skills for adapting to rapidly changing technologies.	(Capstone)	Internal	Final Report, Presentation, Project design, build and demo
6. Students will able to be multi disciplined and relate lasers, photonics and optics to electronics, mechanical and computerized systems.	(Capstone)	Internal	Final Report, Presentation, Project design, build and demo