

PASCOR OUTCOMES ASSESSMENT STRATEGY

A project outcomes assessment strategy has been developed, based on the project's Strategic Plan. Formative and summative research methods will be used to determine the project's strengths, opportunities for improvement and participant outcomes. This strategy will assess the effectiveness of the project's activities to determine impact on students, faculty, curriculum, research & development growth and overall achievement and satisfaction of proposed goals and objectives. Professor Lueny Morell, project Co-PI and assessment coordinator, will oversee all program evaluation activities associated with this project.

An Assessment Committee has been created with the following members:

- Dr. Rosa Buxeda (first year coordinator)
- Dr. Jorge Vélez (outreach coordinator)
- Dr. Luis Olivieri (researcher)
- Mr. Wayne Johnson (industrial partner).

This Committee will have the charter to design and implement the project's assessment strategy. A graduate student will help the coordinator in data collection activities, assessment tools design, administration, data analysis and other evaluation activities developed. It will also be the responsibility of the Coordinator to disseminate results through publications and presentations in national and international conferences.

In order to have comprehensive and valid results, the assessment plan has the following elements:

- Internal (self-assessments)
- External (outside the project)
- Multiple criteria (variety of modes and viewpoints)
- Holistic (integrated)
- Qualitative and quantitative components.

The assessment strategy being developed will go through the following steps:

1. Study the project's goals, tasks, expected outcomes and measurable outcomes/metrics/performance indicators, as per the Project's Strategic Plan. **Status: done.**
2. Develop specific criteria for each of the metrics/performance indicators identified. **Status: in-progress.**
3. Develop assessment tools and data collection methods. **Status: in-progress.**
4. Establish the assessment schedule (for formative and summative assessments).
5. Conduct assessments as per schedule.
6. Analyze assessment data.

7. Prepare assessment reports to different constituents (to provide feedback for process re-engineering as needed throughout the project duration, and other purposes).

Performance indicators already identified:

1. Course Development

- Number of new courses created
- Number of courses revised to include RS-GIS modules/activities
- Number of faculty participating in course development (formal courses & developing modules for SMET courses)
- Student learning outcomes, including development of 'soft' skills.
- PaSCoR Engineering courses' compliance with ABET 2000
- Quality of courses
- Number of students obtaining the RS-GIS certificate per year
- Number of students/graduates placed in jobs related to RS-GIS
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2. Undergraduate Research

- Number of faculty mentors
- Number of undergraduate students participating
- Number of Summer internships
- Quality of student research activity
- Use of existing laboratory facilities
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3. Partnerships

- Number of industry, government and other institutions collaborating in research, Summer internships and other activities
- Number of student projects provided by industry (& other) partners
- Number of experts brought to the classroom for lectures, seminars and workshops

4. Outreach

- Web-page
- Newsletter
- Brochures and posters distributed
- Recruitment activities carried
- Number of peer-reviewed publications, books, citations, presentations per researcher and students per year
- Additional external funds obtained per year
- Number of industrial collaborations/contacts made by researchers
- Curricular materials dissemination to other institutions
- Production of a CD-ROM with curricular material

5. Other

- Infrastructure development (laboratory facilities enhanced and created)
- Equipment purchases
- Donations
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ASSESSMENT TOOLS DEVELOPED

1. Overall Project Assessment Matrix
2. Project Activity Assessment Form
3. Evaluation of Student Performance in Summer Internships
4. Course Development Evaluation Form
5. Oral Presentations Assessment Form
6. Report Assessment Form
7. Assessment of Teamwork Experiences
- 8.

PASCOR Overall Assessment Design Matrix

TASK	GOALS AND OBJECTIVES	STAKEHOLDERS	Faculty	Industry /others
Curriculum Development		Students		
	<ul style="list-style-type: none"> Develop a new interdisciplinary, practice-based curriculum in RS-GIS, that balances content with 'soft' skills 			
	<ul style="list-style-type: none"> Integrate these new courses into the permanent academic programs of ECE, Geology, Mathematics and Agricultural Sciences 			
	<ul style="list-style-type: none"> Facilitate and encourage the inclusion of RS-GIS content into existing SMET courses 			
	<ul style="list-style-type: none"> Develop an RS-GIS undergraduate engineering curriculum in compliance with ABET 2000 			
	<ul style="list-style-type: none"> Implement the Learning Factory concept (hands-on, research)curriculum activities into the SMET/RS-GIS curriculum 			
Undergraduate Research				
	<ul style="list-style-type: none"> Establish a faculty/expert mentorship program for undergraduate students 			
	<ul style="list-style-type: none"> Establish linkages and collaboration with industry, government and other schools 			
Industrial Partners				
	<ul style="list-style-type: none"> Establish a local Industrial Advisory Board to provide guidance and support of the project 			
	<ul style="list-style-type: none"> Expand the industrial sponsor base 			
	<ul style="list-style-type: none"> Coordinate the development of research projects for undergraduate students 			
	<ul style="list-style-type: none"> Identify strategies to amplify the effectiveness of the Learning Factory 			
Outreach	<ul style="list-style-type: none"> Develop a process for the members to fully share instructional, laboratory, and experiences 			
	<ul style="list-style-type: none"> Develop a process for continuous communication of project activities and outcomes to all stakeholders 			

PROJECT ACTIVITY ASSESSMENT

March, 1999

The Partnership for Spatial and Computational Program (PaSCoR), a 5-year project sponsored by NASA, is completing its first year. The project leaders would like to assess the attainment of the project goals and objectives in all of its areas: curriculum, undergraduate research, industry partnership and outreach.

The purpose of this assessment is:

- To determine the respondent's satisfaction of his/her involvement in the PaSCoR project, and,
- To establish the effectiveness of the strategies being implemented.

The results of this assessment will help the PaSCoR Team to better plan and adjust the project's strategy in the future.

PLEASE ANSWER TO THE BEST OF YOUR KNOWLEDGE ALL QUESTIONS THAT MAY APPLY:

YOUR INVOLVMENT WITH THE PASCOR PROJECT (ACTIVITY):

- PASCOR COURSE:

- SEMINAR/WORKSHOPS:

- UNDERGRADUATE RESEARCH
- OUTREACH
- INDUSTRY COLLABORATION
- OTHER: _____

RESPONDENT:

- FACULTY
- UNDERGRADUATE STUDENT
year: _____; department: _____
- GRADUATE STUDENT
- ADMINISTRATOR
- OTHER: _____

Using the scale below, please circle the number, which indicates THE DEGREE TO WHICH YOU AGREE that each of the following statements is descriptive of the experiences you were exposed to and provided by this project. Please write any suggestions for improvement.

- 1: disagree (needs major changes: please indicate)**
- 2: somewhat agree (needs changes: please indicate)**
- 3: agree (needs minor changes: please indicate)**
- 4: strongly agree (no need for improvement)**

PASCOR COURSES (OR WORKSHOPS/SEMINARS):

1. Are interesting (content, lectures, resources, etc.)	1	2	3	4
2. Are well organized (#lectures, delivery methods, assessment methods, etc.)	1	2	3	4
3. Are motivating (would suggest to other faculty, students)	1	2	3	4
4. Integrate the use of technology and involve hands-on activities	1	2	3	4
5. Develop teamwork, problem-solving and communication skills	1	2	3	4

UNDERGRADUATE RESEARCH:

1. Provides valuable problem-solving and scientific methodology experience to students	1	2	3	4
2. Provides the opportunity to meet students and faculty from other areas and disciplines	1	2	3	4
3. Provides the opportunity to meet researchers from other universities and organizations	1	2	3	4
4. Motivates the student to consider pursuing graduate degrees	1	2	3	4
5. Motivates the student to earn the RS-GIS certificate	1	2	3	4
6. Establishes a student-mentor relationship				

PARTNERSHIPS:

1. Industry partners provide input and critique to the PaSCoR curriculum	1	2	3	4
2. Partners provide student projects and research ideas	1	2	3	4
3. Partners provide student Summer internships				
4. Partners provide for experts in the classroom, seminars and workshops	1	2	3	4

OUTREACH:

1. PaSCoR Web page provides timely information about the program	1	2	3	4
2. Posters, brochures and other media provide information about the program	1	2	3	4
3. Outreach activities (student meetings, etc.) disseminate successfully the program opportunities	1	2	3	4

SUGGESTIONS FOR IMPROVEMENT

**University of Puerto Rico
Mayagüez Campus
PaSCoR Project**

**EVALUATION OF STUDENT PERFORMANCE IN SUMMER INTERNSHIPS
RESEARCH
PASCOR
University of Puerto Rico
Mayagüez Campus**

COURSE EVALUATION And ASSESSMENT OF SKILLS and KNOWLEDGE

Course: _____

Instructor: _____

The purpose of this assessment is:

- to determine your perception of mastery/level of knowledge and skills developed by the students in this course, and
- to establish the effectiveness of lectures and experiences, as well as of the logistics used.

The results of this assessment will help the instructor in charge of the course to better plan and adjust the course's agenda in the future.

PART I: GENERAL OBJECTIVES AND SKILLS

Directions:

Using the scale below, please evaluate (*) your perception of the mastery of skills and experience the students developed in this course in the areas specified.

N: no skills/no experience

R: rudimentary skills/very little experience

F: functionally adequate skills/some experience

A: advance skill/extensive experience

area	*
skill 1	
skill 2	
objective 1	
objective 2	

PART II: CONTENT, LECTURES AND EXPERIENCES

Directions:

In this part, please indicate (*) your perception of the lectures and activities' effectiveness, using the following scale:

- 0: not effective; would eliminate**
- 1: moderately effective; significant changes (specify)**
- 2: effective; minor changes (specify)**
- 3: very effective; would not change**

module/lectures	*	comments
Module 1: TITLE		
Module 2: TITLE		
Module n: TITLE		

PART III: COURSE LOGISTICS

Directions:

Please indicate (*) how you feel regarding the various aspects designed for the course, using the following scale:

- 0: inadequate; disliked, needs re-engineering!**
- 1: somewhat adequate; needs enhancement**
- 2: adequate; minor changes**
- 3: adequate; no change**

area	*	comments
Number of meetings		
Kinds of assessment techniques		
Requirements		
Number of lectures		
Number of plant trips		
Topics covered		
Course coordination		
Other:		

Would you recommend this course to other students? Explain.

Do you think your expectations were met?
YES/NO. Explain.

Suggestions:

<p><i>Your overall rating of the course: _____/10.</i></p>
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**University of Puerto Rico
Mayagüez Campus
PaSCoR Project**

Course _____ Department _____

TEAMWORK EXPERIENCES ASSESSMENT FORM

Please answer the following questions regarding your work as a team for the completion of the required task.

TASK(S): _____

1. In chronological order, list what your team did during the _____ activity phase. Explain how tasks were distributed, how decisions were made.
2. What facilitated the decision-making process?
3. What was your contribution to the team when decisions had to be taken?
4. What do you think you would like to do differently the next time when working in a team?

NAME _____ TEAM _____

**University of Puerto Rico
Mayagüez Campus**

PaSCoR Course _____

WRITTEN REPORT ASSESSMENT

Name _____

Team _____ date _____

Evaluator _____

Report Title _____

CATEGORY	ASSESSMENT
Cover, title page, table of contents, list of figures, etc.	/10
Abstract	/15
Introduction*	/10
Body*	/20
Conclusions/recommendations*	/15
Language/grammar/clarity	/05
Figures/tables	/05
Bibliography/references	/05
GENERAL	/15
TOTAL	/100

COMMENTS:

**University of Puerto Rico
Mayagüez Campus
PaSCoR Course_____**

ORAL PRESENTATION ASSESSMENT

Team _____ Date _____ Evaluator _____

Part 1 - PRESENTATION

CATEGORY	0	1	2	3	4	5
Organization						
Level						
Knowledge of Material						
Time						
Delivery/Transmission of Material						
Quality of Language						
Order						
Management of Questions						
Ability to Discuss Project and Methodology						
Personal Appearance/Manners						
TOTAL						

PART 2 - CONTENTS

CATEGORY	0	1	2	3	4	5
Introduction/Background						
Body						
Conclusion						
TOTAL						

Part 3 – Overall

CATEGORY	0	1	2	3	4	5
Overall Quality of the Presentation						
Perception of Potential Success in a Competitive Forum						
Perception of Potential in Achieving Results						
TOTAL						

GRAND TOTAL						
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COMMENTS: