



Plan for Assessment of Resources and Services 2025-2030

Department of Agricultural and Biosystems Engineering



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Introduction

The Department of Agricultural and Biosystems Engineering at the University of Puerto Rico at Mayagüez, established in 1948 and integrated with the Agricultural Experiment Station and the Agricultural Extension Service in 1959, combines teaching, research, and outreach in agricultural and environmental engineering and related fields. The department serves as a core unit within the College of Agricultural Sciences with a team of five professors, one researcher, two specialists, a laboratory technician, and an administrative officer.

The department's facilities include the Agricultural Machinery Laboratory and an adjacent building, supporting its educational and research missions. The Department Chair oversees academic programs, resource allocation, and personnel management across the teaching, research, and outreach functions. This document presents the plan to assess the department's resources and services to ensure they effectively support these integrated functions, align with institutional goals, and meet the needs of students, faculty, and the community.

Departmental Mission and Goals

Department Mission

To prepare professionals through education and research, and to support society by implementing new knowledge and technology in the fields of agricultural and environmental systems and agricultural engineering.

Department Goals

The department's goals for resources and services are focused on:

- Providing quality support and resources to lead in higher education and outreach, ensuring students and the community benefit from valuable educational experiences.
- Supporting and strengthening research by maintaining and improving our facilities and resources.
- Institutionalizing a culture of planning and assessment to keep improving our services.
- Fostering a sense of belonging and pride among faculty, staff, and students.
- Contribute to Puerto Rican society by supporting the Agricultural Extension Service's outreach and community engagement efforts.

Alignment with UPR Strategic Plan 2023-2028

The department's focus on evaluating and improving resources and services aligns with the main issues outlined in the UPR Strategic Plan:

- **Strategic Issue 1: Academic Innovation**
Keeping facilities accessible, well-maintained, and equipped supports UPR's goal to deliver quality, up-to-date education to students.

- **Strategic Issue 2: Administrative Innovation for Community Well-being**
Our commitment to efficient processes, responsive services, and effective resource usage aligns with UPR's aim to improve operations and service for the university community.
- **Strategic Issue 3: Innovation in Research with Social Commitment**
Enhancing research resources and outreach aligns with UPR's mission to drive research that benefits Puerto Rico.

Alignment with UPRM Strategic Plan 2012-2022

The department's goals for resources and service improvement also align with UPRM's priorities:

- **Objective 1: Institutionalizing Planning and Assessment**
Our regular assessment and improvement focus supports UPRM's commitment to use planning and assessment in daily operations.
- **Objective 2: Leading in Higher Education**
By keeping facilities, resources, and services up-to-date, the department helps UPRM meet its goal of providing the best possible education.
- **Objective 5: Strengthening Research**
Supporting research through well-maintained resources aligns with UPRM's focus on building a strong research culture.
- **Objective 6: Impacting Puerto Rican Society**
Our commitment to effective services and outreach reflects UPRM's goal to expand its positive impact throughout Puerto Rico.

Purpose of the Plan for Assessment of Resources and Services

This plan seeks to regularly assess and improve the resources, services, and administrative support provided by the Department of Agricultural and Biosystems Engineering at the University of Puerto Rico at Mayagüez. The assessment process aims to ensure that the department's facilities, academic support services, and administrative processes meet the needs of students, faculty, and staff while aligning with institutional goals.

The plan will help the department gather feedback, recognize strengths, and identify areas for improvement. By evaluating advising, enrollment support, facilities, equipment, the departmental website, and administrative functions, the department can better use resources, simplify processes, and strengthen support for teaching, research, and outreach.

Objectives of the Assessment

This plan aims to assess and improve the resources and services provided by the Department of Agricultural and Biosystems Engineering. The specific objectives of the assessment are:

- **Academic Advising and Student Support Services:** Evaluate the quality and effectiveness of services that assist students in academic planning, including guidance on course selection, registration, transfers, special permissions, curricular sequences, and graduate program orientation. The end is to ensure students receive accurate and timely support to meet their academic goals. This objective also includes assessing the department's support for student engagement activities, such as its collaboration with the Asociación de Estudiantes de Sistemas Agroambientales (AESA).
- **Facilities and Equipment:** Assess the availability, condition, and adequacy of technical equipment, instrumentation, classrooms, computer center, study areas, and other spaces used for teaching, research, and student support. The goal is to maintain safe, functional, and welcoming facilities that support learning and research activities.
- **Administrative Processes and Support:** Assess the efficiency and effectiveness of departmental administrative processes, including budgeting, resource management, staff support, and communication. The goal is to identify ways to streamline processes, improve internal and external communication, and ensure that staff have the needed resources to support departmental operations effectively.

Assessment Areas and Focus

This section outlines the key areas that will be assessed as part of the department's commitment to enhancing resources and services. Each area reflects core components essential to supporting students, faculty, and the department's mission.

Academic Advising and Student Support

This area evaluates the quality, accessibility, and effectiveness of academic advising and student support services, including:

- Assistance with developing a plan of study to help students stay on track with academic requirements.
- Advising on the department's curricular sequence and second-degree options.
- Guidance on transfer processes and permissions for studying at other institutions.
- Orientation on practicum requirements and options.
- Information on available curricular sequences, minors, and graduate program options at UPRM.
- Advising on academic progress and economic aid requirements.

Enrollment Assistance

This component examines the efficiency and responsiveness of support provided during enrollment, including:

- Assistance with course selection and enrollment-related concerns.
- Support for resolving registration issues.

Departmental Website and Communication

This area assesses the departmental website as a central information resource and the effectiveness of departmental communication, focusing on:

- The website's accessibility, usability, and content relevance for students, faculty, and the community.
- The clarity and availability of essential information shared through departmental communication channels.

Facilities

This assessment evaluates the condition and suitability of physical spaces used for teaching, research, and student support, with an emphasis on:

- The condition, accessibility, and suitability of classrooms, computer center, study areas, and other departmental spaces.
- Ensuring facilities meet safety and functionality standards and provide a welcoming environment.

Equipment and Teaching/Research Resources

This component assesses the availability, condition, and adequacy of laboratories, technical equipment, and other resources essential for academic and research activities, focusing on:

- Ensuring lab equipment and technology are up-to-date and sufficient for teaching and research needs.
- Verifying that resources are well-maintained and accessible for faculty, students, and research projects.

Administrative Processes and Support

This area evaluates the efficiency and effectiveness of the department's administrative processes, covering:

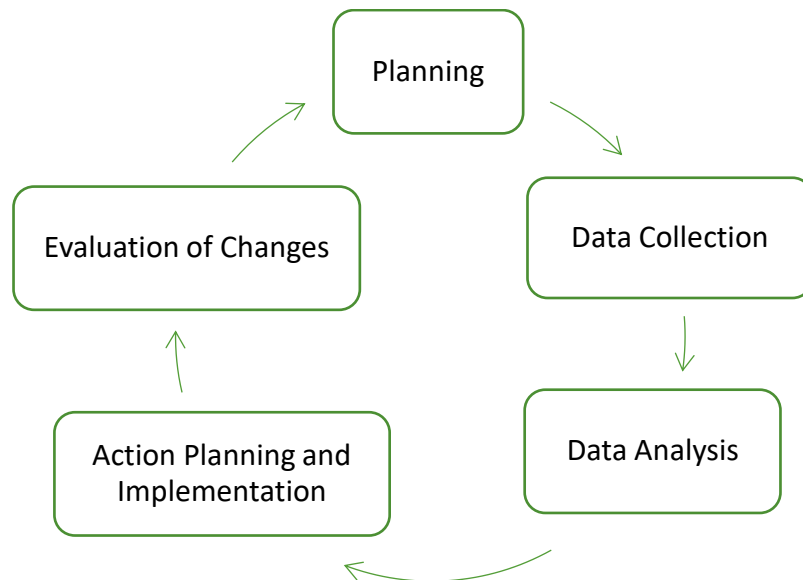
- Resource management.
- Staff support.
- Internal communication within the department and coordination with other university units.

Student Engagement

This component assesses the department's support for student engagement, particularly in collaboration with the AESA, ensuring that students are encouraged to participate in and benefit from department-sponsored activities.

Assessment Process and Methods

The assessment process design ensures a systematic approach to evaluating and improving the department's resources and services. It consists of five key stages:



I. Planning

The Department Chair, in collaboration with the Departmental Assessment Committee (DAC), defines the specific focus for each assessment cycle based on the objectives in the plan. They select appropriate methods and instruments, such as surveys and inspections, and set clear timelines for data collection to ensure that assessments are conducted on a semester or annual basis as needed.

II. Data Collection

The DAC oversees the implementation of selected assessment methods, including surveys, focus groups, facility inspections, and document reviews. Data is collected from students, faculty, and staff to view departmental resources and services comprehensively. The committee ensures confidentiality and reliability standards are upheld throughout data collection to guarantee accurate, actionable results.

III. Data Analysis

Data analysis is led by the DAC, which reviews quantitative and qualitative data to identify strengths and areas for improvement. The committee summarizes findings, highlights key insights, and, where possible, compares results to previous assessments to track progress over time.

IV. Action Planning and Implementation

Based on the data analysis, the Department Chair develops an action plan for each focus area considering the recommendations of the DAC. The plan shall outline specific improvements, timelines, and assigned responsibilities. Planned actions are then communicated to faculty, staff, and students, ensuring transparency and encouraging engagement. As the action plan is implemented, the Department Chair monitors progress and addresses any challenges that may arise.

V. Evaluation of Changes

Once changes are implemented, the DAC conducts follow-up assessments to evaluate their effectiveness. Feedback from these assessments is used to make further adjustments, if necessary, supporting a continuous improvement loop aligned with the department's mission and goals.

Assessment Methods

This section describes the specific methods and tools used during data collection to gather comprehensive insights.

Surveys

- **Student Satisfaction Surveys:** Distributed each semester to gather feedback on advising, enrollment support, facilities, equipment, and engagement activities, including support for the AESA.
- **Faculty and Staff Surveys:** Conducted annually to evaluate satisfaction with resources, administrative processes, and internal communication.
- **Website Usability Survey:** Periodically offered to assess the accessibility, usability, and relevance of the departmental website.

Inspections and Audits

- **Facility Inspections:** Conducted each semester to evaluate the condition, accessibility, and functionality of classrooms, computer center, study areas, and other spaces.
- **Equipment Audits:** Performed annually to ensure that lab and technical equipment meet teaching and research needs.

Website and Communication Analysis

- **Content Review:** Conducted each semester to ensure that website information is up-to-date and relevant.
- **Communication Audit:** Reviews departmental announcements and other communication channels to verify effectiveness and reach.

Development of Assessment Instruments

The DACS, in collaboration with the Department Chair, will design the specific instruments required for gathering data as outlined in this plan. These instruments, which may include

surveys, focus group questions, facility inspection checklists, and audit forms, will be tailored to align with the assessment objectives for each focus area. The instruments will ensure the collection of relevant, actionable data that supports informed decision-making for department improvements.

Once finalized, all approved and periodically used assessment instruments will be included in the appendix of this document. Copies of single-use instruments will be kept in the department's records. Retention of all assessment instruments allows for consistent application and reference during each assessment cycle.

Assessment Scheduling

Recognizing the need for a manageable assessment process, not all areas in this plan will be evaluated annually. Instead, the DACS and Department Chair will establish a Five-Year Assessment Calendar specifying which focus areas will be assessed each academic year. Such a calendar allows sufficient time to gather and analyze data, perform improvements, and evaluate changes in each objective while better distributing the limited human and fiscal resources over the assessment cycle.

The five-year calendar provides a balanced approach, ensuring that each aspect of the department's resources and services is periodically reviewed while allowing sufficient time to implement and monitor improvements. By distributing assessments across this period, the department can focus on thorough evaluations without overwhelming resources. Each year, the calendar will guide the department in selecting the focus areas for that academic year, allowing for flexibility in response to emerging needs or priorities.

Analysis and Use of Results

This section describes how the department will analyze and apply the information gathered from the assessment process to support ongoing improvement. By reviewing results and planning specific actions, the department will ensure that its resources and services effectively meet the needs of students, faculty, and staff.

Data Analysis

The DAC will lead the review of quantitative and qualitative data collected through assessment methods, such as surveys, inspections, document reviews, or focus groups. Quantitative data, like survey responses and enrollment records, will be analyzed to find patterns, satisfaction levels, and significant trends. Qualitative information, including open-ended survey responses and feedback from focus groups, will be reviewed to identify common themes, concerns, and suggestions for improvement. This approach ensures a complete understanding of both strengths and areas for improvement.

Summarizing Findings

The DAC will prepare a summary of findings for each focus area based on the objectives of the assessment plan. This summary will highlight important insights, including strengths and potential areas for improvement. Findings will be organized according to the assessment objectives, providing a clear and practical overview of results across areas like academic advising, enrollment support, facilities, equipment, and departmental communication. These summaries will be the basis for identifying and planning specific improvements.

Reporting the Results

Findings will be shared with relevant department members to ensure transparency and encourage participation in the improvement process. The Department Chair and the Assessment Committee will present key results during departmental meetings to discuss outcomes and ideas for action. A summary of the findings will also be made available to faculty, staff, and students, as appropriate, and may be shared with university administrators to align with broader institutional goals.

Using Results for Improvement

The Department Chair, in collaboration with the DAC, will implement actions based on the recommendations from assessment results. These actions form the Continuous Improvement Plan, which includes defined timelines, assigned responsibilities, and required resources. Planned measures may involve reallocating resources, upgrading facilities, improving advising and enrollment services, or enhancing administrative processes. All actions will be documented using the Action Documentation Template (Appendix B) as part of the Departmental Continuous Improvement Plan.

Actions may be categorized as preventive, corrective, or process improvement. Understanding these distinctions is key to addressing issues effectively and supporting long-term growth. Preventive actions aim to reduce risks before problems arise. Corrective actions address identified nonconformities by targeting root causes and preventing recurrence. Process improvement actions focus on increasing efficiency or effectiveness, even when no immediate issue is present. Documenting these actions with clear roles, deadlines, and evaluation criteria promotes transparency and reinforces a culture of evidence-based decision-making and continuous improvement.

Monitoring Progress and Ensuring Continuous Improvement

To track change effectiveness, the department will include follow-up assessments in future cycles to evaluate the impact of previous actions. The Assessment Committee will monitor the progress of each action item, ensuring that changes meet the intended goals and identifying any areas that need further adjustment. This continuous monitoring supports an improvement cycle, allowing the department to adjust its resources and services in response to changing needs and assessment findings.

Roles and Responsibilities

This section outlines the roles and responsibilities of key individuals and committees involved in the assessment process. Clear assignment of duties ensures accountability and supports an organized, effective approach to evaluating and improving the department's resources and services.

Department Chair

The Department Chair provides overall leadership for the assessment process, ensuring alignment with the department's mission and goals. Specific responsibilities include:

- Collaborate with the DAC to set priorities for each assessment cycle.
- Oversee the development of assessment instruments and finalize the five-year assessment calendar.
- Monitor the implementation of the Continuous Improvement Plan and address any emerging challenges.
- Communicate assessment findings and planned improvements to faculty, staff, students, and other University offices, as appropriate, to ensure transparency and engagement.
- Ensure assessment activities and improvements align with broader university goals and policies.

Departmental Assessment Committee

The DAC is responsible for coordinating and carrying out the various stages of the assessment process. The committee's duties include:

- Develop and review assessment instruments, such as surveys and checklists, in collaboration with the Department Chair.
- Collect data through surveys, focus groups, inspections, and other methods, ensuring confidentiality and accuracy.
- Analyze quantitative and qualitative data to identify trends, strengths, and areas for improvement.
- Summarize findings and recommend improvement actions.
- Update the Continuous Improvement Plan.
- Update the Plan for Assessment of Resources and Services.

Faculty and Staff

Faculty and staff play an important role in the assessment process by providing input, participating in surveys, and supporting the implementation of improvement actions. Responsibilities include:

- Provide feedback on resources, facilities, and support services through annual surveys and other assessment instruments.

- Assist with data collection and contribute insights during departmental meetings on assessment findings.
- Actively support the implementation of action plans to improve the department's services and resources.
- Support the department's efforts to improve student satisfaction and engagement, particularly in advising, facilities, and instructional support.

Students

Students contribute valuable feedback that helps improve resources, services, and support. Student responsibilities in the assessment process include:

- Participate in student satisfaction surveys and focus groups to provide honest feedback on experiences with advising, enrollment, facilities, and departmental engagement opportunities.
- Share insights into potential improvements through various feedback channels offered by the department.
- Engage with department-led initiatives to enhance the overall academic experience, including activities organized by the AESA.

Review of the Plan

The DAC will review this Plan for Assessment of Resources and Services every five years (e.g. at the end of the assessment cycle) to ensure it remains effective and aligned with the department's goals and needs. This review will consider feedback from faculty, staff, and students and any changes to departmental or university priorities.

Based on the review, the Committee may adjust assessment methods, update the five-year assessment calendar, or revise specific objectives to reflect current needs. Any updates to the plan will be documented and shared with faculty, staff, and other relevant stakeholders.

Appendixes

Appendix A: Assessment Calendar

Stage	Activity	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul
Planning	Department Chair and DAS define the goal to be assessed in the current cycle	X											
Data Collection	DAS defines the instruments to be used in the current cycle		X	X	X	X							
	DAS executes data collection for the current cycle						X	X	X				
	DAS prepares a report of data collected for the current cycle									X	X		
Analysis	DAS identifies and reports strengths and areas for improvement from the previous cycle		X	X	X								
Action Planning	Assessment Committee submits report to Department Chair outlining the recommended steps to improve resources and services based on previous cycle data				X								
	Department Chair shares resources and services improvement plan with faculty					X							

Stage	Activity	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul
Implementation and Follow-up	Department Chair implements improvements, monitors progress, and addresses challenges						X	X	X	X			
	DAS summarizes implemented improvements and documents the closure of the assessment cycle (previous year)								X	X			
	Assessment cycle (previous year) report presented to faculty and submitted to Department Chair										X		

Appendix B. Action Documentation Template

Type of Action:

Select the category that best describes the nature of the action.

☐ Preventive ☐ Corrective ☐ Improvement

Title/Brief Description of the Action:

Provide a short, clear title and summary of the action to be taken.

Date Identified:

Indicate the date when the need for this action was first recognized. Indicate the date when the need for this action was first recognized.

Responsible Person(s):

List the individual(s) responsible for implementing and overseeing the action.

Root Cause (if applicable):

Describe the underlying issue or cause, especially for corrective actions.

Detailed Description of Action Steps:

Outline the specific steps that will be taken to implement the action.

Resources Required:

List materials, funding, personnel, or other resources needed.

Timeline / Due Date:

Indicate start and end dates, including any key milestones.

Method of Verification:

Describe how the completion and effectiveness of the action will be evaluated.

Status (Open/In Progress/Closed):

Mark the current status of the action.

☐ Open ☐ In Progress ☐ Closed

Comments/Notes:

Include any additional relevant information or observations.