POLYTECHNIC UNIVERSITY OF THE PHILIPPINES
STA. MESA MANILA
COLLEGE OF ENGINEERING

Self-Study Report (SSR)

Bachelor of Science in Civil Engineering

Criterion 6

Program Resources and Learning Environment

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A LEADING COMPREHENSIVE POLYTECHNIC UNIVERSITY IN ASIA

QUALITY MANAGEMENT SYSTEM IS CERTIFIED ACCORDING TO ISO 9001

EDUCATIONAL ORGANIZATION MANAGEMENT SYSTEM IS CERTIFIED ACCORDING TO ISO 21001

QS WORLD UNIVERSITY RANKINGS 2025
#8 in the Philippines #116 in Southeast Asia #671 in Asia

QS STARS

Times Higher Education Impact Rankings 2025 DEBUTS AT 1501+

WURI 250 OUT OF 400

CRITERION 6 – PROGRAM RESOURCES AND LEARNING ENVIRONMENT

The Polytechnic University of the Philippines (PUP) provides adequate and well-maintained physical, instructional, and student support facilities that contribute to the effective implementation of the Bachelor of Science in Civil Engineering (BSCE) program. These resources support the attainment of the program educational objectives and student outcomes by providing an environment conducive to teaching, learning, research, laboratory activities, and professional development. The University's facilities are regularly utilized to enhance students' academic experiences through the integration of theoretical knowledge, practical applications, and collaborative learning opportunities.

The *College of Engineering and Architecture (CEA) Building* is a four-storey academic facility located within the NDC Campus along Pureza Street corner Anonas Street. It serves as the primary academic facility of the ***Department of Civil Engineering***, along with other departments under the College of Engineering and the College of Architecture, Design, and the Built Environment. Strategically designed to foster interdisciplinary collaboration and engineering education, the CEA Building accommodates both academic and administrative functions necessary to support the University's technical programs.

Figure 6.1 *Exterior façade of the College of Engineering and Architecture building at the Polytechnic University of the Philippines.*

The building supports the delivery of instruction, laboratory work, and student development activities through its expansive and well-structured physical layout. With a total floor area

of 10,968.71 square meters, the facility houses 29 office rooms, enabling efficient administration and faculty operations across departments. It also includes 19 classrooms that cater to lectures, design courses, and academic discussions, alongside 53 laboratories, a substantial number that highlights the college's strong emphasis on hands-on, practical training in various fields of engineering, architecture, and applied sciences. To support daily operations and the well-being of its occupants, the building is equipped with 17 restrooms and one dedicated function room that serves as a venue for seminars, student orientations, academic forums, and institutional gatherings.

Figure 6.2 *Vicinity map of the Polytechnic University of the Philippines Main Campus in Sta. Mesa, highlighting key academic, administrative, and recreational facilities, including the College of Engineering and Architecture building.*

The PUP College of Engineering and Architecture Building is best understood not as an isolated facility, but as a vital part of the larger Polytechnic University of the Philippines Main Campus ecosystem. Within this dynamic academic setting, the CEA Building connects seamlessly with a network of laboratories, research centers, open grounds for surveying activities, and surrounding academic structures that collectively support civil engineering education.

Viewed in this broader context, the experience of Civil Engineering students becomes more comprehensive and immersive. Their learning extends beyond the walls of a single building, drawing from nearby resources such as the Engineering and Science Research Center, library spaces, and shared student areas. This interconnected environment fosters

collaboration, enhances accessibility to essential facilities, and encourages interdisciplinary engagement. Ultimately, the narrative shifts from focusing on one structure to recognizing a campus-wide system that nurtures technical competence, innovation, and professional growth (Attachment C6-01 - PUP CEA Layout and Floor Plans).

Table 6.1 *Building Information of the College of Engineering and Architecture*

Total Area (m^2)	Total No. of Office Room	Total No. of Classrooms	Total No. of Laboratories	Total No. of Restroom	Total No. of Function Room
10,968.71	29	19	53	17	1

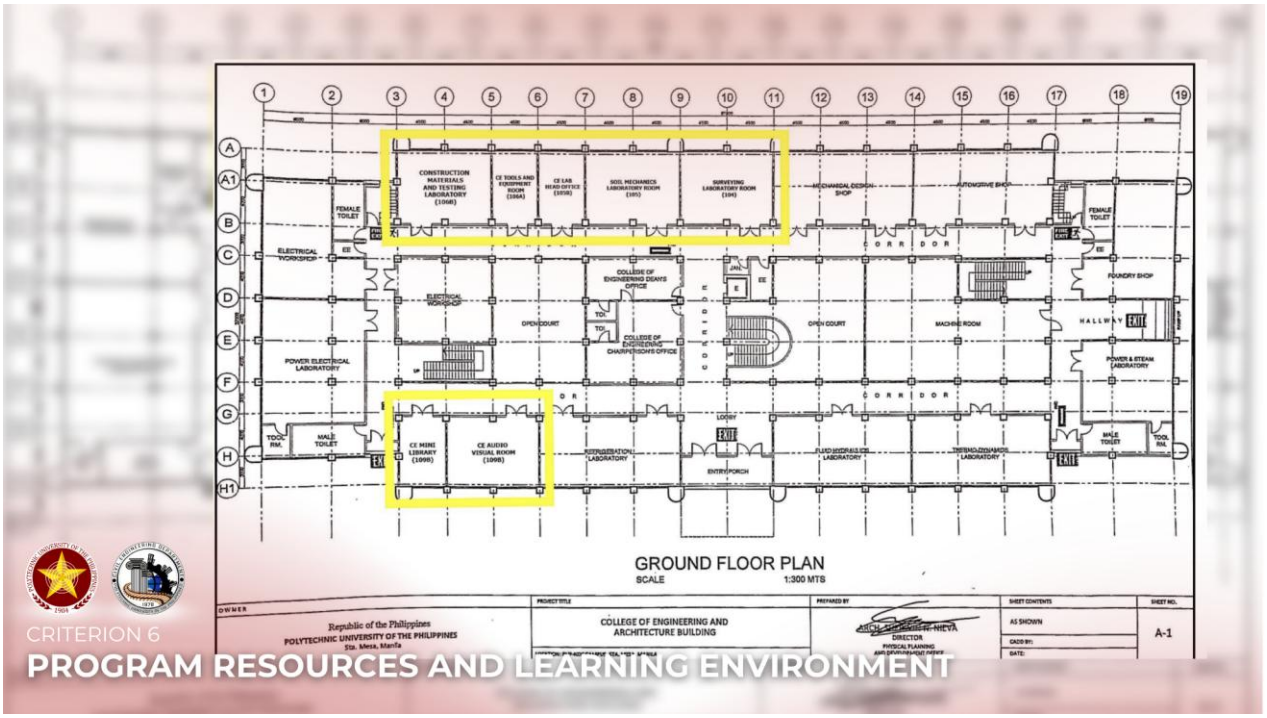


Figure 6.3 *Ground floor plan of the College of Engineering and Architecture (CEA) building at the Polytechnic University of the Philippines (PUP), highlighting designated civil engineering classrooms and laboratory spaces. The layout illustrates the spatial organization and functional distribution of instructional and laboratory facilities within the ground level.*

The Polytechnic University of the Philippines provides various facilities to support the attainment of the students' outcomes across its academic programs.

A. OFFICES, CLASSROOMS, LABORATORIES AND SUPPORT FACILITIES

[Summarize each of the program's facilities in terms of their ability to support the attainment of the program educational objectives and student outcomes and to provide an atmosphere conducive to learning.]

The administrative and faculty facilities of the Bachelor of Science in Civil Engineering program are systematically organized to support the effective delivery of outcomes-based education and to ensure alignment with the program's mission, educational objectives, and student outcomes. These facilities provide the necessary environment for efficient academic governance, faculty engagement, and continuous quality improvement.

The college provides facilities such as classrooms, laboratories, and other support facilities which are essential parts of the program to the achievement of specific course objectives, program educational objectives, and student outcomes. Adequate equipment and supplies for each laboratory are also maintained.

To enhance its information and communication technology infrastructure, the College of Engineering and Architecture (CEA) implemented the **CEA Connectivity Network Cabling Project** in the fourth quarter of 2025. Fully completed and operational in 2026, the project established structured network cabling and reliable internet connectivity across all facilities of the CEA Building, supporting instruction, research, extension, and administrative services while demonstrating the College's commitment to academic excellence, innovation, and the effective delivery of educational services.

A.1. Office of the College Dean, Program Chair and Laboratory Head

[Offices (such as administrative, faculty, clerical, and teaching assistants) and any associated equipment that is typically available there.]

The institution provides administrative and faculty facilities such as offices for the Deans and Program Chairs to effectively administer and manage the program. The College of Engineering administrative offices are located at the CEA building comprising the offices and working area of the College Dean, and the program chairpersons, faculty members and the administrative staff. The College Dean, Program Chairs, and the admin staff are provided with their own working computer units with printers. The faculty members have their designated working tables, cabinets, and one (1) personal computer with internet connection. A space is provided for student-faculty consultation activities, meetings, and others.

Figure 6.4 *Interior view of the* ***College Dean's Office*** *located on the ground floor of the College of Engineering and Architecture (CEA) building at the Polytechnic University of the Philippines (PUP). The space is arranged to support administrative functions, featuring the Dean's working table, a reception/work area, meeting table, and organized records storage, reflecting its role in academic leadership and coordination.*

The **Office of the Chairperson of the Civil Engineering Department** is primarily located at Room *CEA 218* of the College of Engineering and Architecture (CEA) Building. This office serves as the central administrative and academic unit for the Bachelor of Science in Civil Engineering (BSCE). The office has a total floor area of 36 square meters and houses the Chairperson's Office. It is equipped with essential office facilities including desktop and laptop computers that can be used by faculty and designated student assistants for academic and administrative tasks.

Figure 6.5 *The Civil Engineering Department Office*

The office also features a small conference table, which accommodates short meetings, student consultations, and collaborative discussions related to instruction, research, and academic advising. A stable Wi-Fi connection is available throughout the office, enabling faculty members to perform essential digital functions such as web-based research, grade encoding, online communication, and access to learning management systems.

The **Laboratory Head's Office**, located in Room CEA 105B and occupying 63.0 square meters, supports the operational needs of the department's laboratory facilities. This office serves as a workspace for managing laboratory schedules, coordinating maintenance, monitoring safety compliance, and overseeing laboratory-based instruction and student research.

Both offices are managed by the BSCE department, ensuring alignment with academic goals and seamless integration with teaching and learning activities. These administrative spaces play a critical role in supporting faculty productivity, student services, and the overall academic environment of the Civil Engineering Department (Attachment C6-02 - Photo Documentation of Administrative Offices).

Table 6.2 *Office Information*

Room Name	Total Area (m^2)	Location	Department In-charge
Dean's Office	72.00	CEA 1ST Floor	College Dean
Chairpersons Office	36.00	CEA 218	BSCE
Laboratory Head's Office	63.00	CEA 105A	BSCE

Figure 6.6 *Receiving Area of the Civil Engineering Laboratory Head's Office (CEA Room 105B) at the College of Engineering and Architecture (CEA) Building, Polytechnic University of the Philippines (PUP). This section facilitates student laboratory transactions, including equipment requests, reservations, and documentation, serving as a controlled interface between laboratory personnel and users.*

In addition, the **Engineering Sciences Office** is situated on the third floor of the CEA Building, specifically in CEA Room 321, where the Chairperson of the Engineering Sciences Department is housed. The office serves as the focal point for the department's operations and academic coordination. The Engineering Sciences Department supports the general education subject requirements of all engineering programs, helping ensure that students gain the essential academic foundation needed for their overall development and success in the field of engineering.

Figure 6.7 The Engineering Sciences Office

Research and Extension Coordinator's Office

The Research and Extension Coordinator's Office is situated on the second floor of the Gabriela Silang Building. It functions as the focal office for the college's research and extension concerns, ensuring that the needs of the institution in these areas are properly addressed. The office supports the planning, implementation, and monitoring of research and extension programs for the benefit of the college community.

Figure 6.8 *Research and Extension Coordinator's Office | College of Engineering. An administrative office responsible for managing research activities and extension programs, supporting collaboration, knowledge development, and community engagement.*

QA and OJT Coordinator Office

The QA and OJT Coordinator Office is located in the CEA Building, on the third floor, Room 319. This office serves as the center for the college's quality assurance and on-the-job training concerns. It caters to the needs of the college by coordinating OJT-related activities and supporting quality assurance initiatives, ensuring that programs and services are effectively implemented for the benefit of students, faculty, and the entire college community.

Figure 6.9 *Office of Quality Assurance, Quality Control, and OJT Coordination. A designated administrative space supporting the implementation of quality standards, monitoring of academic and laboratory processes, and coordination of on-the-job training to ensure the professional development of engineering students.*

A.2. The Faculty Room

The Polytechnic University of the Philippines (PUP) provides dedicated working spaces for its academic personnel to support the effective performance of teaching, research, extension, and administrative functions. Faculty members are provided with faculty rooms at the Gabriela Silang Building.

These offices are furnished with office tables and chairs, cabinets, pigeonholes, computer sets, printers, electric fans, and air-conditioning units, ensuring an adequate and conducive working environment (Attachment C6-03 - Photo Documentation of Faculty Room).

Table 6.3 *Faculty Room Information*

Room Name	Total Area (m^2)	Location	Department In-charge
CE Faculty Room	81.20	2nd Floor Gabriela Silang Building	CE

Figure 6.10 *The Staff/Faculty Room*

A.3. The Classrooms

[Classrooms and associated equipment that is typically available where the program courses are taught.]

The academic units of the university are provided with classrooms of varying capacities and functions to address the specific needs of the students' courses and program. These instructional spaces are utilized efficiently to ensure that teaching and learning activities are conducted in an environment conducive to academic engagement and success (Attachment C6-04 - BSCE Room Schedule).

Each classroom is designed to meet the following standards:

- **Capacity and Environment:** Instructional spaces are strategically designed to accommodate 30 to 50 students, prioritizing optimal lighting and ventilation to maintain an environment conducive to academic excellence. In some cases, particularly for major courses, classes are also held in specific laboratories to provide students with immediate access to samples, specimens, tools, and other instructional materials that may be needed for demonstration and discussion during lectures. Furthermore, it should be noted that the majority of these general education offerings are conducted in cycling schedules of Face-to-face and online synchronous modalities to ensure delivery efficiency and flexibility.

- **Instructional Equipment:** Each classroom is fully equipped with essential instructional tools, including interactive TV, Interactive Projector, standard chalkboards and whiteboards for technical demonstrations and lectures. To support multimedia integration in rooms without installed interactive TV and/or projector, portable digital projectors may be borrowed through the Office of the Civil Engineering (CE) Laboratory Head. These units may be checked out prior to the commencement of scheduled sessions and must be returned promptly thereafter to ensure availability for subsequent use.

Learning Environment Facilities and Room Amenities: To support a variety of pedagogical methods and maintain an effective learning environment, the following resources and amenities are provided (Attachment C6-05 - Photo Documentation of BSCE Classrooms):

- **Student Accommodations:** Individual armchairs are provided to facilitate structured seating and academic focus.
- **Climate Control:** The rooms are equipped with air conditioning units, and electric fans to ensure consistent ventilation and student comfort during laboratory sessions.

Table 6.4 *Classroom Information for the Civil Engineering Department*

Classrooms	Total Area (m^2)	Seating Capacity	Department In-Charge
CEA Room 407	31.5	30	BSCE
CEA Room 411	31.5	30	BSCE
CE Room 208	94.5	90	ES Department
CE Room 207	94.5	90	ES Department
ITech Room 211	60	60	ITech
CEA Room 206	94.5	90	BSCE
CEA Room 104	63	60	BSCE
CEA Room 105	63	60	BSCE
CEA Room 106	63	60	BSCE
CEA Room 109	63	60	BSCE

Figure 6.11 *Lecture Room CEA 411, located on the 4th Floor of the PUP College of Engineering and Architecture (CEA) Building, is a well-lit and fully ventilated classroom equipped with wall-mounted fans, a teacher's table, and adequate seating to accommodate its designated capacity, supporting effective instructional delivery.*

Figure 6.12 *Lecture Room CEA 206, located on the 2nd Floor of the CEA Building, is a fully air-conditioned classroom with additional wall-mounted fans, used for civil engineering lectures and orientations. The room is equipped with internet connectivity, a teacher's table, and student seating.*

A.4. Civil Engineering Laboratories

[Laboratory facilities including those containing computers (describe available hardware and software) and the associated tools and equipment that support instruction. Include

those facilities used by students in the program even if they are not dedicated to the program and state the times, they are available to students. Indicate adequacy of the number of identical laboratory set-ups and typical class size. Provide documentation on adherence to environment, health and safety good practices (e.g. proper grounding of electrical convenience outlets, safety masks, etc.) Provide listing of the major pieces of equipment used by the program in support of instruction.]

The Department of Civil Engineering at the Polytechnic University of the Philippines maintains specialized laboratories designed to support instructional delivery, practical learning, and research engagement. These laboratories are essential in achieving the program's student outcomes, particularly those that require application of engineering theories, technical competence, and problem-solving skills through hands-on experimentation and project-based activities (Attachment C6-06 - Photo Documentation of BSCE Laboratory Rooms).

Table 6.5 *Laboratory Information of the Civil Engineering Department.*

Laboratory Name	Area (m^2)	Location	Functions
Soil Mechanics Laboratory	63	CEA 105A	Perform several fieldworks and laboratory testing methods
Surveying Laboratory	63	CEA 104	Serves as a setting of teaching of proper handling and utilization of surveying instruments, computation of pace factor, distance corrections, etc.
Construction Material &Testing Laboratory	63	CEA 106B	Perform experiments and laboratory testing methods that are necessary to develop and enhance student's knowledge especially in construction materials.
Hydraulics Laboratory	67.14	2nd Floor, ESRC Building	Conduct experiments for Fluids and Hydraulics.
Chemistry Laboratories	63	4th Floor, CEA Building CEA 419 CEA 420	Provide an opportunity to observe and apply the principles and theories of Chemistry.

Physics Laboratories	63	4th Floor, CEA Building CEA 404 CEA 405	Provide an opportunity to observe and apply the principles and theories of Physics.
Drafting Room	94.5	2nd Floor, CEA Building CEA 207 & 208	Use for Manual Drafting and lecture room.
Dirty Laboratory	144.00	CEA 105D Back of CEA Building	Utilized by the CE-RE students as a workplace for the experiments of Soil Mechanics, Fluid Mechanics, Construction Material & testing, and for the conduct of thesis experiments. Also, this laboratory is also used for building design systems.
Computer Laboratory	63	CEA 211	Medium of teaching and learning process in mathematical sciences. Operate applications such as AutoCAD, MIDAS, ARC GIS and quantity surveying.

The department's key laboratory facilities include the following:

1. **Wet Laboratories -** Involve experiments, material preparation, testing, and the use of water, chemicals, or physical specimens.
   - **Construction Materials and Testing Laboratory** located at CEA 106B with an area of 63 square meters, supports instruction in construction materials, concrete technology, and quality control through hands-on testing of civil engineering materials. The laboratory is furnished with technical and scientific equipment including a Universal Testing Machine (UTM), compression testing machine, concrete mixer, slump cone apparatus, sieve shaker, aggregate testing equipment, curing tanks and other equipment and tools for evaluating the properties and performance of construction materials.

Table 6.6 *Summary of Supported Laboratory courses and Target Student Outcomes of the Civil Engineering Construction Materials & Testing Laboratory*

Laboratory Room	Supported Laboratory Courses in the Curriculum		Student Outcomes Primarily Addressed	Method of Supporting Student Outcomes
	2018 BSCE Curriculum	2022 BSCE Curriculum		
Construction Materials & Testing Laboratory	CIEN 30023 - Construction Materials and Testing	CIEN 204 - Construction Materials and Testing	SO1. Apply knowledge of mathematics, natural science, engineering fundamentals, and a civil engineering specialization to the solution of complex civil engineering problems. SO2. Conduct investigations of complex civil engineering problems using research-based knowledge and research methods including design of experiments, analysis, and interpretation of data, and synthesis of the information to provide valid conclusions. SO4. Function effectively as an individual, and as a member or leader	Develops competency in evaluating concrete, steel, aggregates, and other construction materials through standard testing procedures. Students learn quality control, material selection, performance evaluation, and documentation practices essential to safe infrastructure development

Laboratory Room	Supported Laboratory Courses in the Curriculum		Student Outcomes Primarily Addressed	Method of Supporting Student Outcomes
	2018 BSCE Curriculum	2022 BSCE Curriculum		
			in diverse teams and in multi-disciplinary settings. SO5. An ability to identify, formulate, and solve engineering problems SO7. Communicate effectively on complex civil engineering activities with the engineering community and with society at large, such as being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.	

- **Soil Mechanics/Geotechnical Engineering Laboratory** provides practical training in soil classification, compaction, permeability, and strength testing. It is located at CEA 105A with an area of 63 square meters, where students perform fieldwork-related activities and laboratory tests essential to geotechnical studies. Major equipment includes SPT Test Apparatus, drilling tools, Atterberg limits

apparatus, direct shear machine, triaxial testing apparatus, consolidation testing equipment, permeability testing devices, Proctor compaction molds, soil sieves and other specialized Soil Mechanics apparatus.

Table 6.7 *Summary of Supported Laboratory courses and Target Student Outcomes of the Civil Engineering Soil Mechanics Laboratory*

Laboratory Room	Supported Laboratory Courses in the Curriculum		Student Outcomes Primarily Addressed	Method of Supporting Student Outcomes
	2018 BSCE Curriculum	2022 BSCE Curriculum		
Civil Engineering Soil Mechanics Laboratory	CIEN 30083 - Geotechnical Engineering 1	CIEN 301 - Geotechnical Engineering 1 (Soil Mechanics)	SO1. Apply knowledge of mathematics, natural science, engineering fundamentals, and a civil engineering specialization to the solution of complex civil engineering problems. SO2. Conduct investigations of complex civil engineering problems using research-based knowledge and research methods including design of experiments, analysis, and interpretation of data, and synthesis of the information to provide valid conclusions. SO4. Function effectively as an individual, and as a	Enables students to perform laboratory testing of soil properties, analyze geotechnical behavior, interpret results for foundation and earthwork applications, and make engineering recommendations based on evidence and established standards

Laboratory Room	Supported Laboratory Courses in the Curriculum		Student Outcomes Primarily Addressed	Method of Supporting Student Outcomes
	2018 BSCE Curriculum	2022 BSCE Curriculum		
			member or leader in diverse teams and in multi-disciplinary settings. SO5. An ability to identify, formulate, and solve engineering problems SO7. Communicate effectively on complex civil engineering activities with the engineering community and with society at large, such as being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.	

- **Hydraulics and Fluid Mechanics Laboratory,** located on the 2nd Floor of the ESRC Building with an area of 67.14 square meters facilitates experiments on fluid behavior, flow measurement, and hydraulic principles. The laboratory is furnished with hydraulic benches, Bernoulli's apparatus, pipe friction apparatus, flow meters, venturi meters, weirs, flumes, centrifugal pump and other similar specialized equipment tools and apparatus.

Table 6.8 *Summary of Supported Laboratory courses and Target Student Outcomes of the Hydraulics Laboratory*

Laboratory Room	Supported Laboratory Courses in the Curriculum		Student Outcomes Primarily Addressed	Method of Supporting Student Outcomes
	2018 BSCE Curriculum	2022 BSCE Curriculum		
Hydraulics Laboratory	CIEN 30063 – Hydraulics 1 CIEN 30143 – Hydraulics 2	CIEN 310 – Hydraulics 1 CIEN 311 – Hydraulics 2	SO1. Apply knowledge of mathematics, natural science, engineering fundamentals, and a civil engineering specialization to the solution of complex civil engineering problems. SO2. Conduct investigations of complex civil engineering problems using research-based knowledge and research methods including design of experiments, analysis, and interpretation of data, and synthesis of the information to provide valid conclusions. SO4. Function effectively as an individual, and as a member or leader in diverse teams and in	Allows students to investigate hydraulic and fluid-flow phenomena through experimentation. Laboratory activities strengthen analytical skills, data interpretation, engineering judgment, and understanding of water-related infrastructure systems

Laboratory Room	Supported Laboratory Courses in the Curriculum		Student Outcomes Primarily Addressed	Method of Supporting Student Outcomes
	2018 BSCE Curriculum	2022 BSCE Curriculum		
			multi-disciplinary settings. SO5. An ability to identify, formulate, and solve engineering problems SO7. Communicate effectively on complex civil engineering activities with the engineering community and with society at large, such as being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions. SO9. Recognize the need for and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.	

Laboratory Room	Supported Laboratory Courses in the Curriculum		Student Outcomes Primarily Addressed	Method of Supporting Student Outcomes
	2018 BSCE Curriculum	2022 BSCE Curriculum		
			SO12. Demonstrate knowledge and understanding of engineering management principles and economic decision-making and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments	

2. **Dry Laboratories -** Focus on analysis, design, computation, simulation, and data processing rather than physical experimentation:

   - **Surveying Laboratory** located at CEA 104 with an area of 63 square meters, provides a venue for learning the proper handling and utilization of surveying instruments and is utilized to develop competencies in land surveying, mapping, and geospatial data collection. The laboratory is equipped with modern surveying equipment like total stations, automatic levels, theodolites, GNSS/GPS receivers, leveling rods, tripods, compasses, and other surveying accessories.

Table 6.9 *Summary of Supported Laboratory courses and Target Student Outcomes of the Civil Engineering Surveying Laboratory*

Laboratory Room	Supported Laboratory Courses in the Curriculum		Student Outcomes Primarily Addressed	Method of Supporting Student Outcomes
	2018 BSCE Curriculum	2022 BSCE Curriculum		
Civil Engineering Surveying Laboratory	CIEN 30013 - Fundamentals of Surveying 1 CIEN 30033 - Fundamentals of Surveying 2 CIEN 30053 - Route Surveying and Earthworks	CIEN 201 - Fundamentals of Surveying 1 CIEN 202 - Fundamentals of Surveying 2	SO1. Apply knowledge of mathematics, natural science, engineering fundamentals, and a civil engineering specialization to the solution of complex civil engineering problems. SO2. Conduct investigations of complex civil engineering problems using research-based knowledge and research methods including design of experiments, analysis, and interpretation of data, and synthesis of the information to provide valid conclusions. SO4. Function effectively as an individual, and as a member or leader in diverse teams and in multi-disciplinary settings.	Provides hands-on experience in field measurements, topographic surveys, route location, and earthwork computations. Students operate surveying instruments, collect and analyze data, prepare technical reports, and perform collaborative field activities that mirror professional surveying practice

Laboratory Room	Supported Laboratory Courses in the Curriculum		Student Outcomes Primarily Addressed	Method of Supporting Student Outcomes
	2018 BSCE Curriculum	2022 BSCE Curriculum		
			SO5. An ability to identify, formulate, and solve engineering problems SO7. Communicate effectively on complex civil engineering activities with the engineering community and with society at large, such as being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions. SO12. Demonstrate knowledge and understanding of engineering management principles and economic decision-making and apply these to one's own work, as a member and leader in a team, to manage projects and in	

Laboratory Room	Supported Laboratory Courses in the Curriculum		Student Outcomes Primarily Addressed	Method of Supporting Student Outcomes
	2018 BSCE Curriculum	2022 BSCE Curriculum		
			multidisciplinary environments	

- **Computer Laboratory** (CAD Laboratory, Building Systems Design Laboratory, Structural Analysis and Design Laboratory, GIS and Remote Sensing Laboratory), located at CEA 211 with an area of 63 square meters is equipped with *50 computer workstations, 3D printers, and a suite of engineering software applications* such as AutoCAD, MIDAS, ArcGIS, and quantity-surveying applications that support instruction, research, design, and technical analysis. The facility provides students and faculty with access to digital tools for computer-aided drafting, structural analysis, modeling, engineering simulation, and project planning.

Table 6.10. *Summary of Supported Laboratory courses and Target Student Outcomes of the Civil Engineering Computer Laboratory*

Laboratory Room	Supported Laboratory Courses in the Curriculum		Student Outcomes Primarily Addressed	Method of Supporting Student Outcomes
	2018 BSCE Curriculum	2022 BSCE Curriculum		
Civil Engineering Computer Laboratory	ENSC 20013 - Computer-Aided Drafting MATH 20093 - Numerical Solutions to CE Problems	ENSC 014 - Computer-Aided Drafting CIEN 205 - Numerical Solutions to CE Problems	SO1. Apply knowledge of mathematics, natural science, engineering fundamentals, and a civil engineering specialization to the solution of complex	Provides access to industry-standard software for structural, geotechnical, transportation, water resources, drafting, quantity surveying, and numerical analysis

Laboratory Room	Supported Laboratory Courses in the Curriculum		Student Outcomes Primarily Addressed	Method of Supporting Student Outcomes
	2018 BSCE Curriculum	2022 BSCE Curriculum		
	CIEN 30073 - Building Systems Design CIEN 30272 - Quantity Surveying	CIEN 305 - Building Systems Design CIEN 406 - Quantity Surveying	civil engineering problems. SO3. Design solutions for complex civil engineering problems and design systems, components or processes that meet specified needs with appropriate consideration for public health and safety, cultural, societal, and environmental considerations. SO5. An ability to identify, formulate, and solve engineering problems SO7. Communicate effectively on complex civil engineering activities with the engineering community and with society at large, such as being able to comprehend and write effective reports and design documentation, make effective	applications. Students develop digital competencies required for engineering analysis, design, simulation, modeling, and project study work

Laboratory Room	Supported Laboratory Courses in the Curriculum		Student Outcomes Primarily Addressed	Method of Supporting Student Outcomes
	2018 BSCE Curriculum	2022 BSCE Curriculum		
			presentations, and give and receive clear instructions. SO10. Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues, and the consequent responsibilities relevant to professional engineering practice and solutions to complex civil engineering problems. SO11. Create, select, and apply appropriate techniques, skills, resources, and modern engineering and IT tools, including prediction and modeling, to complex civil engineering problems with an understanding of the limitations	

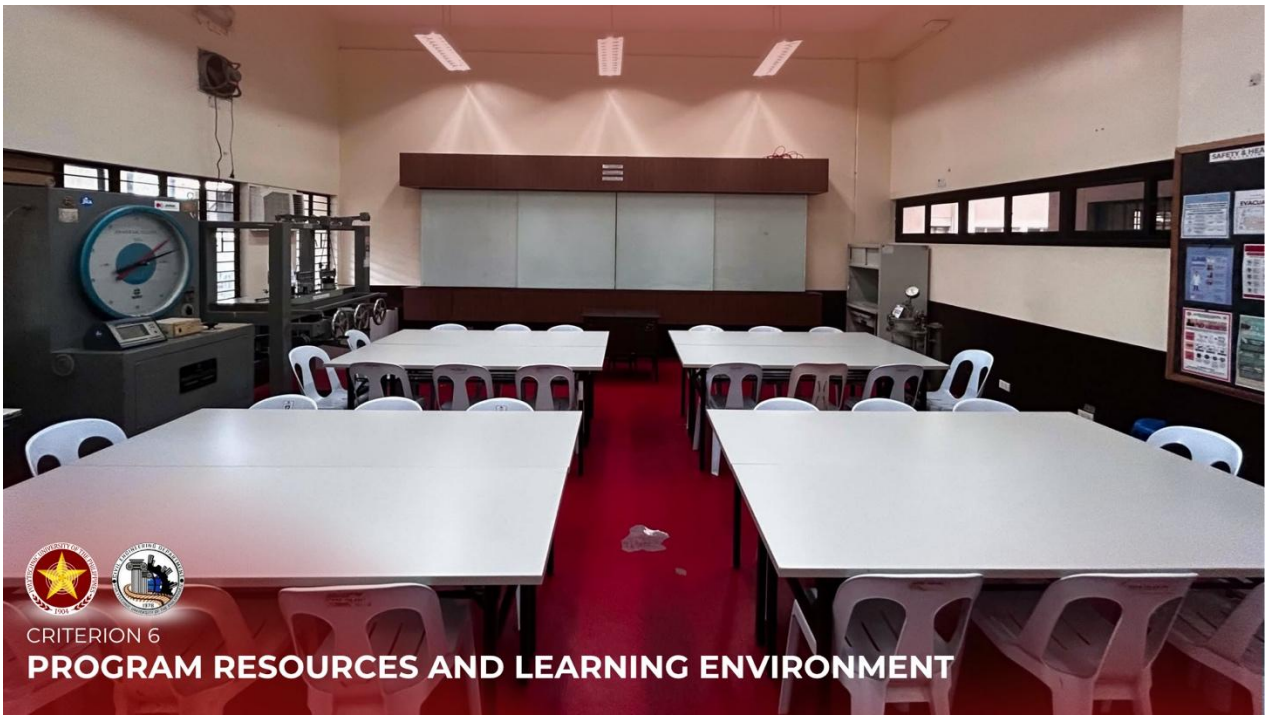


Figure 6.13 *Construction Materials and Testing Laboratory (CEA 106B), a fully air-conditioned facility designed for laboratory activities, equipped with working tables and specialized materials testing equipment to support instructional and experimental work.*

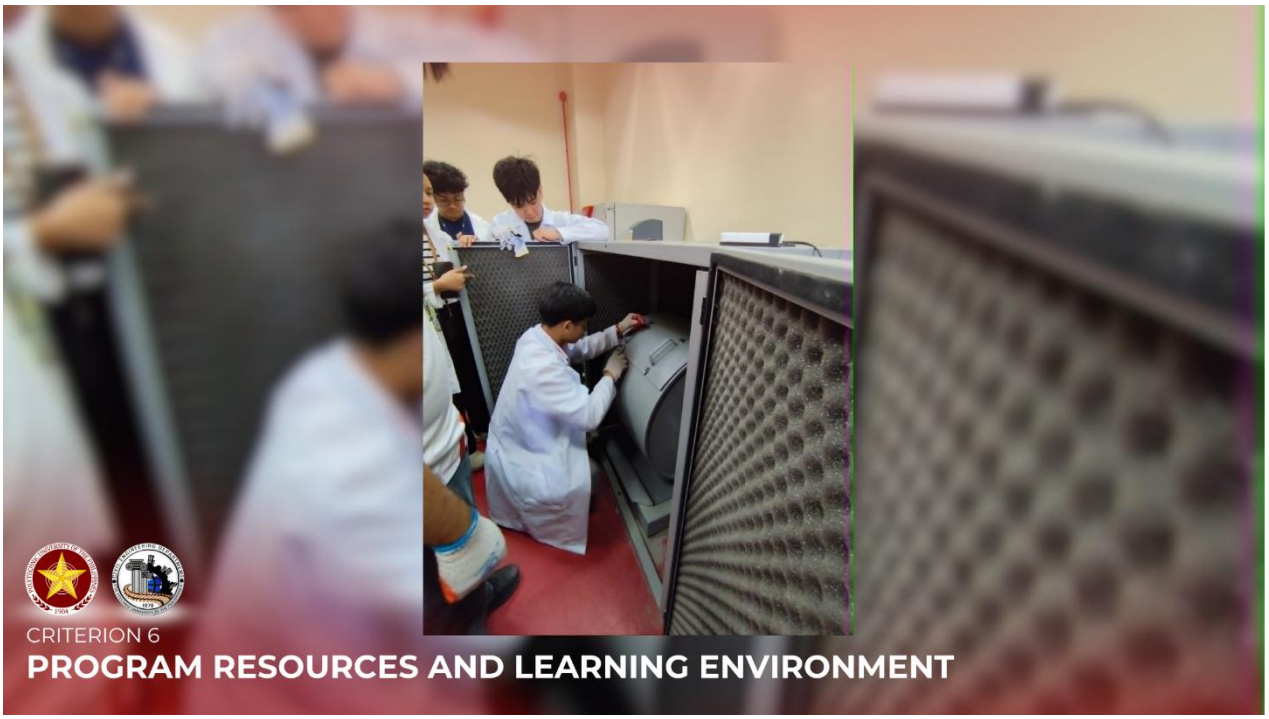


Figure 6.14 *Civil Engineering students conduct a laboratory activity using the Los Angeles (LA) Abrasion Machine, ensuring proper operation, accurate measurement, and adherence to established protocols for evaluating the resistance of aggregates to wear and degradation.*

Figure 6.15 *Equipment Room (CEA 106A) at the PUP College of Engineering and Architecture Building, a fully air-conditioned facility used for laboratory testing, equipped with a working table, specialized equipment, and internet connectivity to support technical operations.*

Figure 6.16 *Soil Mechanics and Geotechnical Engineering Laboratory (CEA 105A) at the PUP College of Engineering and Architecture Building, a fully air-conditioned facility for laboratory lectures and activities, equipped with working tables, soil testing equipment, internet connectivity, and ICT tools including interactive projectors and an interactive TV.*

Figure 6.17 *Documenting Laboratory Practice through Academic Output. Students capture and present their experimental procedures as part of their course requirements, demonstrating proper handling of oven-dried aggregate samples and adherence to standard laboratory methodologies. This video output reflects both technical competence and the integration of theory with practical application in Civil Engineering laboratories.*

Figure 6.18 *Fluid Mechanics and Hydraulics Laboratory, located on the 2nd Floor of the ESRC Building, is a fully air-conditioned facility designed for laboratory instruction and experimentation, equipped with working tables and specialized equipment for fluid and hydraulic studies.*

Figure 6.19 *Civil Engineering students conduct a laboratory activity using specialized hydraulic apparatus, applying fundamental principles of fluid behavior, measurement, and analysis while adhering to standard laboratory procedures and safety practices.*

Figure 6.20 *The hydraulic bench is utilized for the observation and measurement of fluid behavior, where data collection and analysis are carried out in accordance with established laboratory standards and procedures.*

Figure 6.21 *Surveying Laboratory (CEA 104A) at the PUP College of Engineering and Architecture Building, a fully air-conditioned facility used for surveying lectures and pre-fieldwork orientations, equipped with working tables and chairs, internet connectivity, and interactive projectors.*

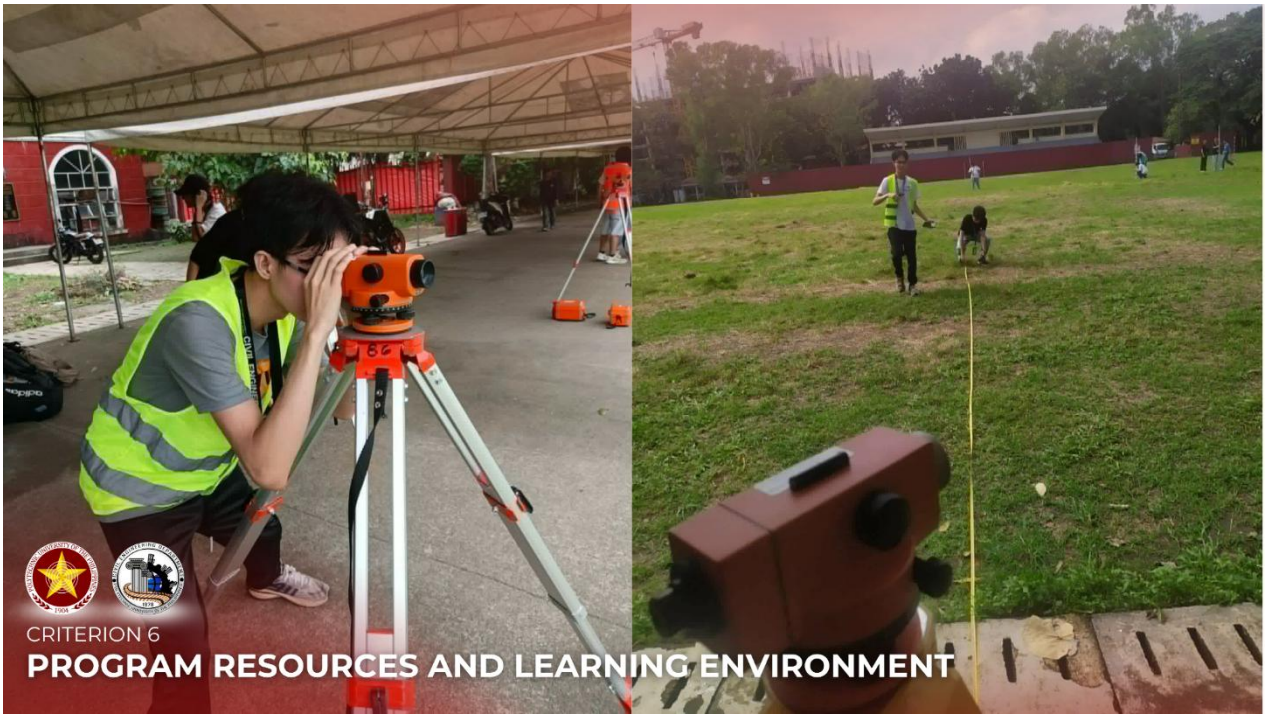


Figure 6.22 *Civil Engineering students conduct a field survey using standard surveying equipment, demonstrating fundamental techniques in data collection, distance measurement, and site analysis essential for engineering planning and design.*

Figure 6.23 *Civil Engineering Computer Laboratory CEA 211, a fully air-conditioned facility designed to support the instructional and technical requirements of the Civil Engineering Department. The laboratory is equipped with 50 computer workstations configured for a one student–one computer setup, an interactive TV and two 3D printers. All computer units are integrated with Wi-Fi and internet connectivity and are outfitted with webcams and headsets to facilitate hybrid learning. Installed software includes industry-standard engineering applications such as AutoCAD, MIDAS, and ArcGIS, enabling hands-on training, simulation, and digital design activities.*

Figure 6.24 *Some of the equipment found at Room 104A, the Surveying Laboratory which includes tools such as total stations, surveying drones, Real Time Kinematic (RTK) Device, Automatic Level, and others.*

Figure 6.25 *Major equipment found at the Soil Mechanics and Geotechnical Engineering Laboratory which includes Triaxial Test Machine, Single Manometer for Permeability, Electronic Sieve Shakers, Multispeed CBR Test Machine, Consolidation Testing Machine, and others.*

Figure 6.26 *Some of the equipment available for student use at the Soil Mechanics Equipment Storage including Electronic Scale, Shrinkage Limit Tool Kit, Motorized Liquid Limit Device, Digital Balance, Set of Sieves, and others.*

Figure 6.27 *Major equipment included at the Equipment Storage Room at Room 106A such as Automatic Penetrometer, LA Abrasion Machine, Laboratory Oven, various kinds of weights, and others.*

Figure 6.28 *Equipment available for instructional and laboratory use at the Materials and Testing Laboratory such as Air Entrainment Meter, Consolidation Testing Machine, Electric Direct Shear Apparatus, Universal Testing Machine, Strain-controlled Direct Shear Apparatus, and others.*

Figure 6.29 *Equipment used located at the Materials and Testing Workstation also known as the Dirty Laboratory which includes Autoclave Machine, Sieve Shakers, Concrete Mixer, curing tanks, Hydraulic Pipe Bender, Soil and Asphalt Mixer, and others.*

Figure 6.30 *Fluid Mechanics and Hydraulics Laboratory equipment used in laboratory classes including Bernoulli's Theorem Apparatus, Flow Meters, Free and Forced Vortex, Gas Bubble Micromanometer, Hydraulic Benches, Impact Jet, Water Hammer Apparatus, and others.*

(See Attachment C6-07 - Photo Documentation of BSCE Laboratory Equipment)

The Dirty Laboratory, located at the back of civil engineering laboratories, functions as an extended experimental area where students perform field-scale experiments and

thesis-related testing in Soil Mechanics, Fluid Mechanics, and Construction Materials. It also supports building design and system development exercises. The laboratory is also utilized for the conduct of thesis experiments of the faculty and students.

Figure 6.31 *Civil Engineering Dirty Laboratory/Working Station (CEA 105D), located on the 1st Floor of the CEA Building, is an auxiliary space adjacent to laboratory rooms designated for hands-on and heavy-duty laboratory activities, and houses selected equipment for practical use.*

Figure 6.32 *The Dirty Laboratory, located in Room 105D, functions as a designated working station where Civil Engineering students perform hands-on laboratory activities.*

Figure 6.33 *Civil Engineering students conduct laboratory preparation of aggregate samples as part of materials testing activities.*

Storage Rooms of Civil Engineering Laboratories

The storage rooms of the Civil Engineering Laboratories serve as secure and organized facilities for the safekeeping, maintenance, and inventory management of laboratory equipment, instruments, materials, tools, and supplies used in Soil Mechanics, Construction Materials Testing (CMT), Surveying, and other laboratory activities. These facilities ensure the proper preservation, accessibility, and readiness of resources, supporting the efficient conduct of instruction, research, and practical training in the Civil Engineering program. This includes:

1. **Soil Mechanics and Geotechnical Engineering Laboratory Storage Room** located at CEA 105C with direct access to laboratory staff inside the Civil Engineering Laboratory Head's Office, serves as a secure facility for the safekeeping, organization, and maintenance of soil testing equipment, sampling tools, laboratory materials, and consumable supplies used in geotechnical and soil mechanics experiments
2. **Construction Materials Testing (CMT) Storage Room**, located at CEA 106B serves as a dedicated facility for the safekeeping, organization, and maintenance of equipment, instruments, test specimens, and materials used in the testing and evaluation of construction materials.

3. **Surveying Storage Room,** located at CEA 104B specialized facility designated for the storage, maintenance, and preservation of surveying instruments, equipment, and accessories utilized in laboratory and field exercises
4. **Equipment Room** is a fully airconditioned room located at CEA 106A that functions as the central repository for laboratory major equipment, and apparatus and instructional resources utilized across the various Civil Engineering laboratory courses.

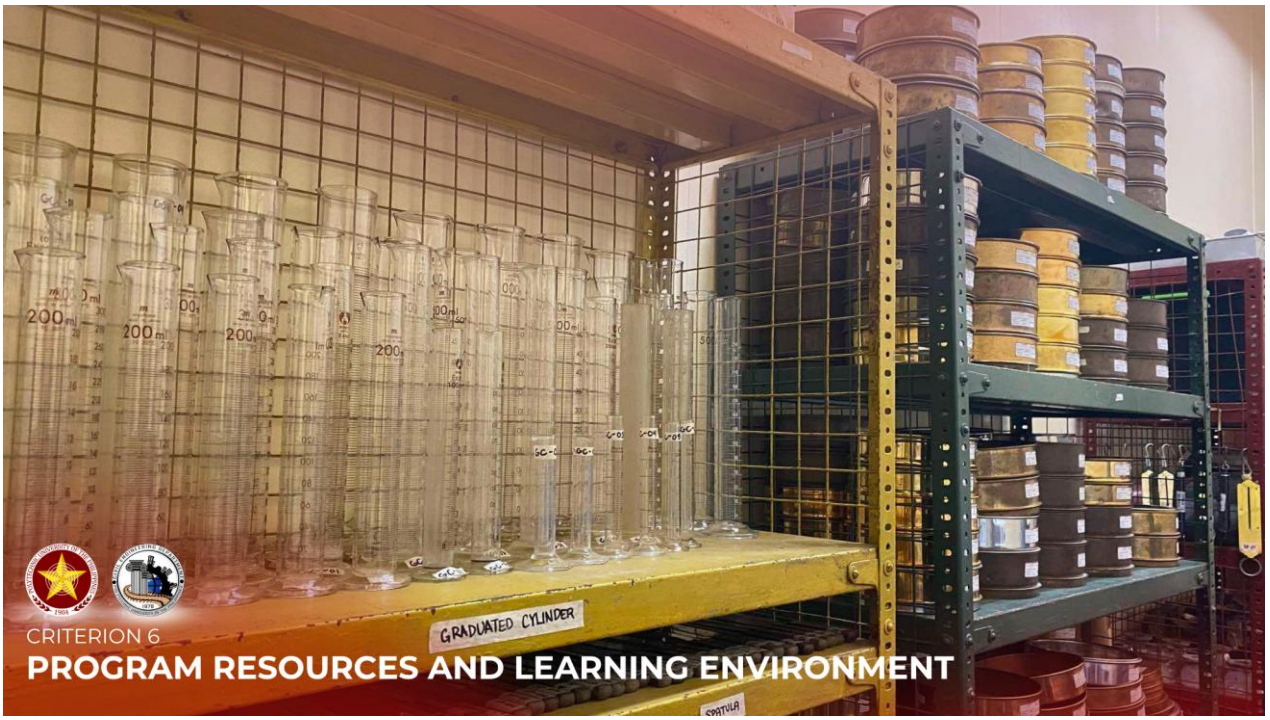


Figure 6.34 *Soil Mechanics and Geotechnical Engineering Laboratory Storage Room, designated for the secure and systematic storage of semi-expendable tools, technical scientific instruments, and specialized equipment used in laboratory activities.*

Figure 6.35 *The Surveying Laboratory Storage Room is located at CEA 104B, organized for the secure and systematic storage of instruments, equipment, and field materials with proper labeling for efficient identification and access.*

Figure 6.36 *A designated facility for the systematic storage and organization of laboratory materials and equipment, ensuring accessibility, proper inventory management, and the preservation of resources essential for civil engineering testing and experimentation.*

Complementing these are the **Chemistry and Physics Laboratories,** which are situated on the fourth floor of the CEA Building and offer opportunities to observe and apply the principles of natural sciences in engineering contexts, where students are given opportunities to observe and apply the principles and theories of Chemistry, and Physics.

Figure 6.37 *A typical Chemistry and Physics laboratory equipped with essential apparatus and workstations, designed to facilitate controlled experiments, accurate measurement, and the application of fundamental scientific principles in an academic setting.*

To reinforce engineering drawing and visual communication, the department provides a **Drafting Room** (94.5 m²) for manual drafting, alongside CAD laboratories for computer-aided design activities (Attachment C6-08 - Photo Documentation of BSCE Drafting Rooms).

Figure 6.38 *Drafting Room CEA 208, located on the 2nd Floor of the PUP College of Engineering and Architecture (CEA) Building, is a well-lit and fully ventilated space equipped with wall-mounted fans. The facility is serviced by the Engineering Science Department and supports drafting and design-related academic activities.*

Availability

These laboratories are open for instructional use from **Monday to Saturday, 7:30 AM to 9:00 PM**, ensuring accessibility for regular classes, make-up sessions, and research activities. Each facility is maintained in adherence to environmental, health, and safety best practices, including proper ventilation, waste management, emergency procedures, and the use of personal protective equipment (PPE) when necessary. Laboratory protocols are regularly reviewed to ensure compliance with institutional and regulatory safety standards, promoting a secure and conducive environment for both students and faculty.

In summary, the Civil Engineering laboratories are integral to the University's mission of producing competent and practice-ready graduates. Their specialized functions, well-maintained conditions, and alignment with safety protocols underscore PUP's commitment to excellence in engineering education.

(See Attachment C6-09 - BSCE Laboratory Schedule)
(See Attachment C6-10 - BSCE Facilities and Equipment Utilization Logbook)
(See Attachment C6-11 - BSCE Facilities and Equipment Utilization Report)

Laboratory utilization is carefully coordinated through *room assignments*, course offerings, and *laboratory staff work schedules*, ensuring the efficient use of available facilities and equitable access for all students. This structured approach allows the department to match laboratory capacity with enrollment demands, optimize scheduling, and support the timely delivery of laboratory instruction.

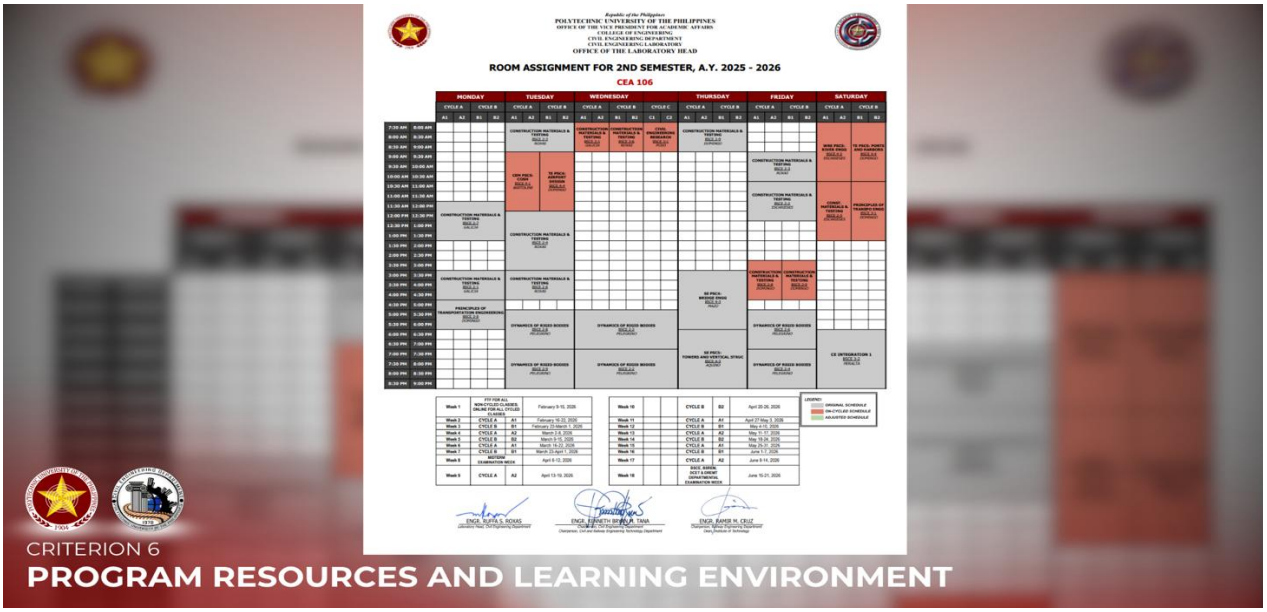


Figure 6.39 *Room Assignment for Civil Engineering Laboratories (CEA 106), Second Semester A.Y. 2025–2026. The schedules present structured allocation of laboratory spaces, course usage, and time slots to support efficient instructional delivery and resource utilization.*

Laboratory activities are systematically organized through ***Civil Engineering Department Online Room and Equipment Reservation Systems***, utilization schedules, and staff work assignments, ensuring the optimal use of facilities and resources. Each laboratory session is carefully coordinated to match course requirements, available equipment, and student capacity. Tools and equipment required per experiment are predefined, ensuring readiness and minimizing disruptions during laboratory sessions.

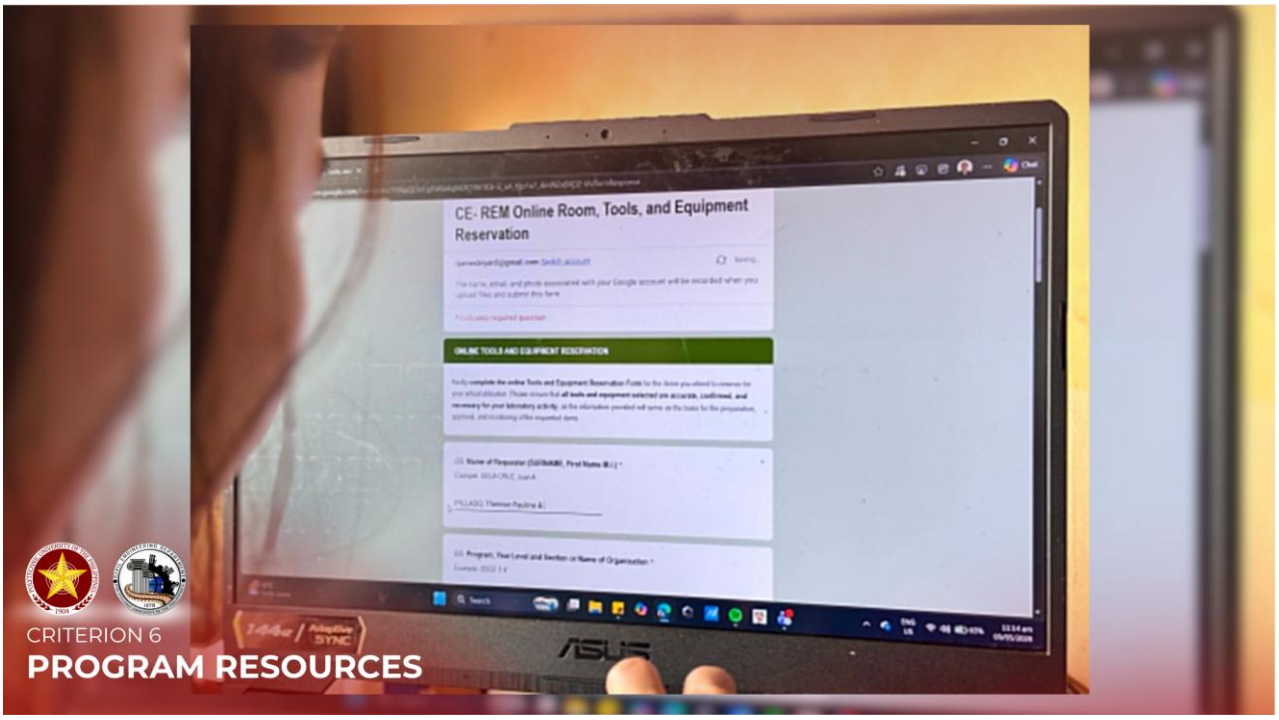


Figure 6.40 *Convenient access to laboratory services anytime, anywhere. A Civil Engineering student uses the Online Room, Tools, and Equipment Reservation System to facilitate efficient and organized scheduling of laboratory resources.*

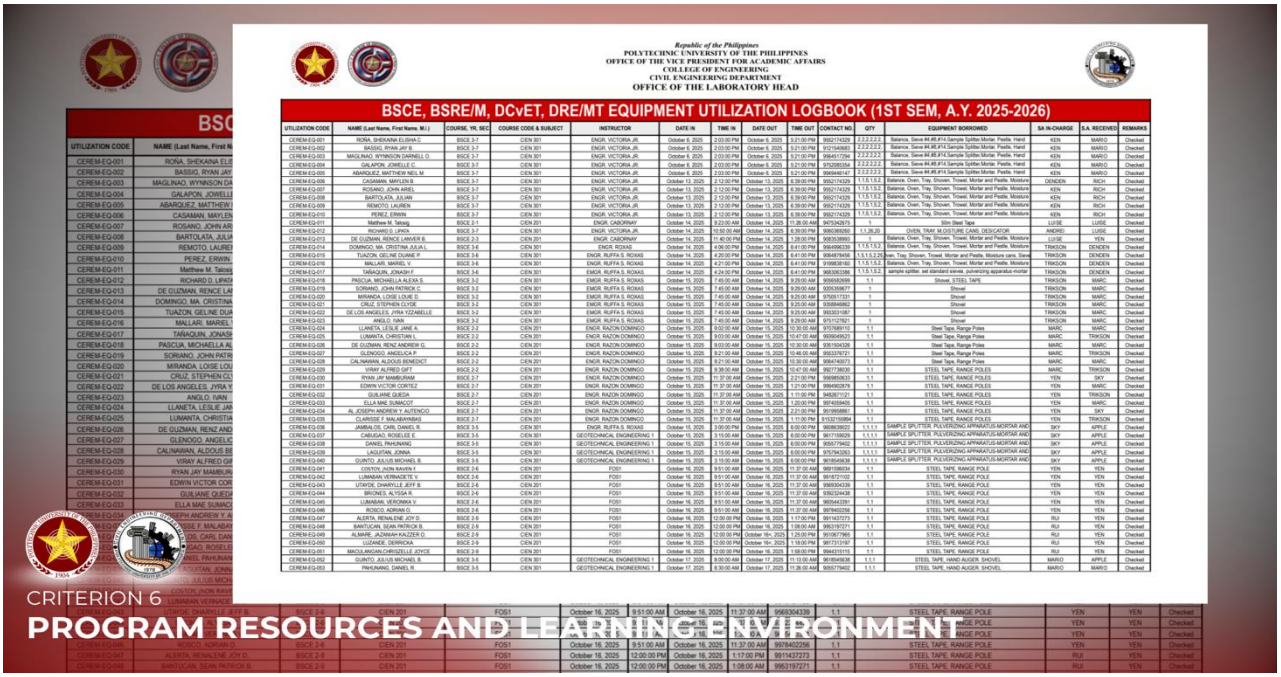


Figure 6.41 *Equipment Utilization Logbook. A digital monitoring system used to document laboratory actual equipment utilization ensure organized operations, accountability, and efficient resource management.*

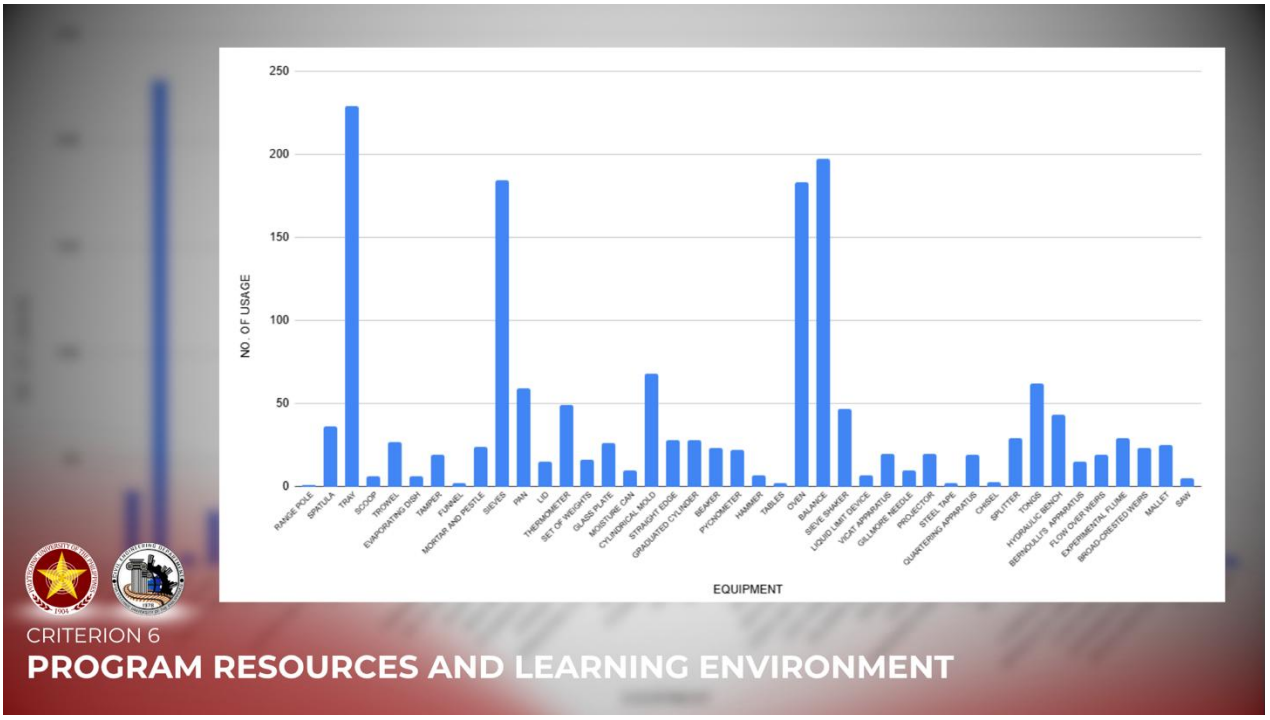


Figure 6.42 *Equipment and Tools Utilization Report | Second Semester A.Y. 2024–2025. A graphical presentation of laboratory equipment and tools utilization, reflecting the frequency of use and supporting the monitoring and management of laboratory resources.*

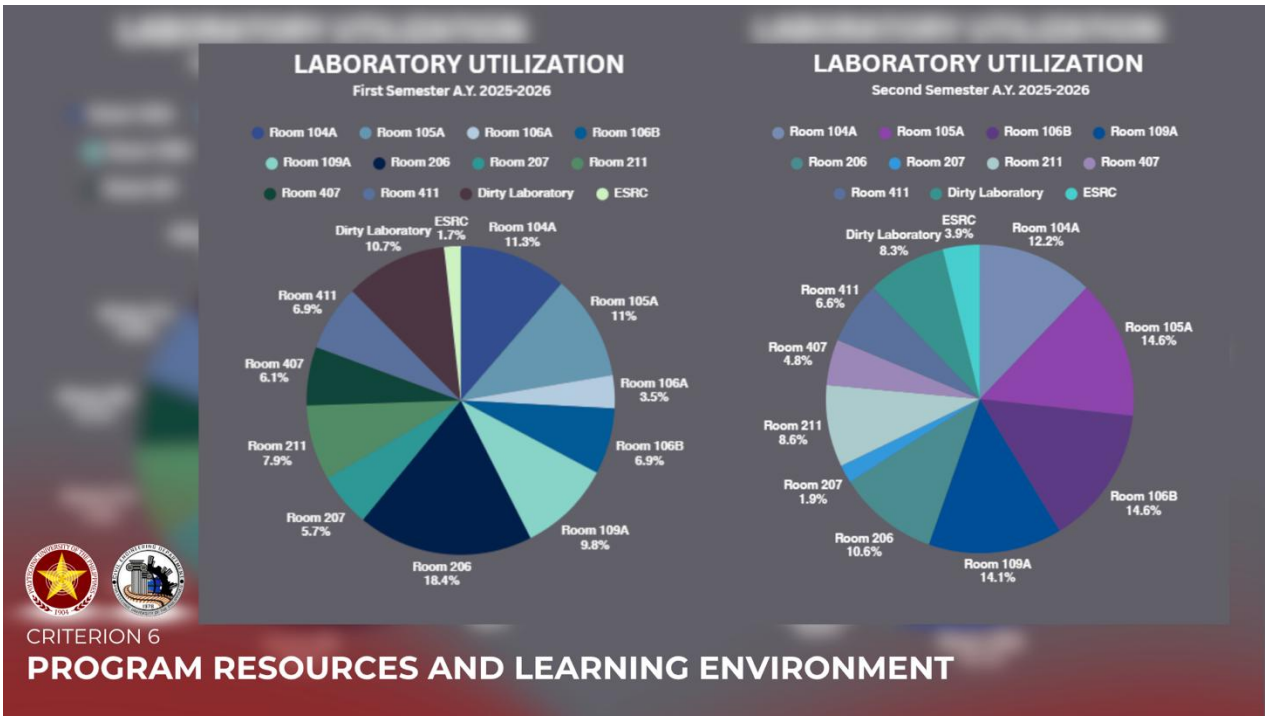


Figure 6.43 *Room Utilization Report | A.Y. 2024–2025. Comparative presentation of room utilization during the first and second semesters, reflecting the frequency of use of laboratories, classrooms, and workstations to support facility monitoring and resource planning.*

ASSESSMENT OF ADEQUACY OF FACILITIES

The Civil Engineering Laboratory maintains adequate operational hours and staffing schedules to ensure accessibility for students enrolled in laboratory courses, research activities, project development, and consultation work. Laboratory schedules are posted at the entrance of each laboratory and are disseminated through departmental announcements and class advisers at the beginning of every semester.

The laboratory is supervised by qualified laboratory personnel and faculty members during scheduled laboratory periods. Consultation and make-up laboratory sessions are also accommodated subject to availability and safety protocols.

To support effective laboratory instruction, the institution provides sufficient numbers of identical laboratory set-ups, apparatuses, and equipment for student use. Laboratory classes are divided into manageable groups to ensure that each student is able to actively participate in experiments, demonstrations, testing procedures, and data gathering activities.

The ratio between laboratory equipment and class size is maintained at an appropriate level to promote hands-on learning, operational safety, and efficient conduct of experiments. Where specialized equipment is limited, *rotational* or *grouped laboratory activities where shifts* in performance are implemented to maximize utilization without compromising student outcomes.

Typically, students are grouped into **t*eams of Five (5) members***, allowing all students *meaningful participation* in laboratory exercises while *maintaining safety and operational efficiency*. However, the program continues to pursue continuous improvement initiatives, including upgrading of laboratory equipment, enhancement of ICT infrastructure, and optimization of space utilization to address future demands and evolving industry standards.

The laboratory facilities are regularly inspected and maintained to ensure functionality, safety, and compliance with institutional and engineering standards.

CHED MEMORANDUM ORDER Compliance Verification

- **Classrooms and Laboratory Space Standards**

Table 6.11 *National Academic Facility Standards and Provisions.*

STANDARDS	PROVISIONS
CMO No. 92.s. 2017	**Section 18.1.** Facilities are covered in Section 2.4, 5.4 of CMO No.86 s. 2017.
CMO No. 86 s. 2017	Section 2.4.1.1. The capacity of the classroom shall be linked to its floor area using the National Building Code.
National Building Code of the Philippines)	**Section 807.** Minimum air space shall be provided as follows: **5.** School rooms – 3.00 cubic meters with 1.00 square meter of floor area per person **6.** Workshops, Factories and Offices – 12.0 cubic meters of air space per person

Requirement: Adequate lighting and ventilation; standard size of **1.0 square meters** per student for Classrooms and approx. **2.7 square meters** per student for Workspaces and Laboratories with average ceiling height of 4.5 meters.

The Bachelor of Science in Civil Engineering program demonstrates compliance with national educational and professional standards through certifications issued by **the Commission on Higher Education (CHED)** and the **Professional Regulation Commission (PRC)**.

CHED issued **Certificate of Program Compliance No. 108, Series of 2021**, confirming that PUP complies with the minimum requirements for offering the BS Civil Engineering program. In addition, the PRC issued a **Certificate of Compliance on February 27, 2024**, after the University was inspected and found compliant with the requirements of Republic Act No. 544.

These certifications provide external validation that the program maintains adequate facilities, laboratories, equipment, faculty, curriculum, and other learning resources. They also support the Department's efforts to provide a safe and appropriate learning

environment for technical instruction, laboratory activities, and the development of professional competencies among Civil Engineering students. To sustain compliance, the Department regularly monitors the condition, availability, and functionality of its facilities and equipment. Maintenance, repair, calibration, upgrading, and procurement activities are undertaken as needed to ensure that the program's resources continue to support effective teaching, learning, research, and laboratory activities.

Republic of the Philippines
Professional Regulation Commission
Manila

CERTIFICATE OF COMPLIANCE

The educational institution/establishment below has been inspected/monitored by the Professional Regulatory Board of/for Civil Engineering and the Professional Regulation Commission and has been found to be fully compliant with the requirements of Republic Act No. 544*

Name of Educational Institution/Establishment : Polytechnic University of the Philippines

Address : 1016 Anonas, Sta. Mesa, Manila

Date of Issuance : February 27, 2024

SIGNATURE REDACTED
PRAXEDES P. BERNARDO
Chairperson
Professional Regulatory Board

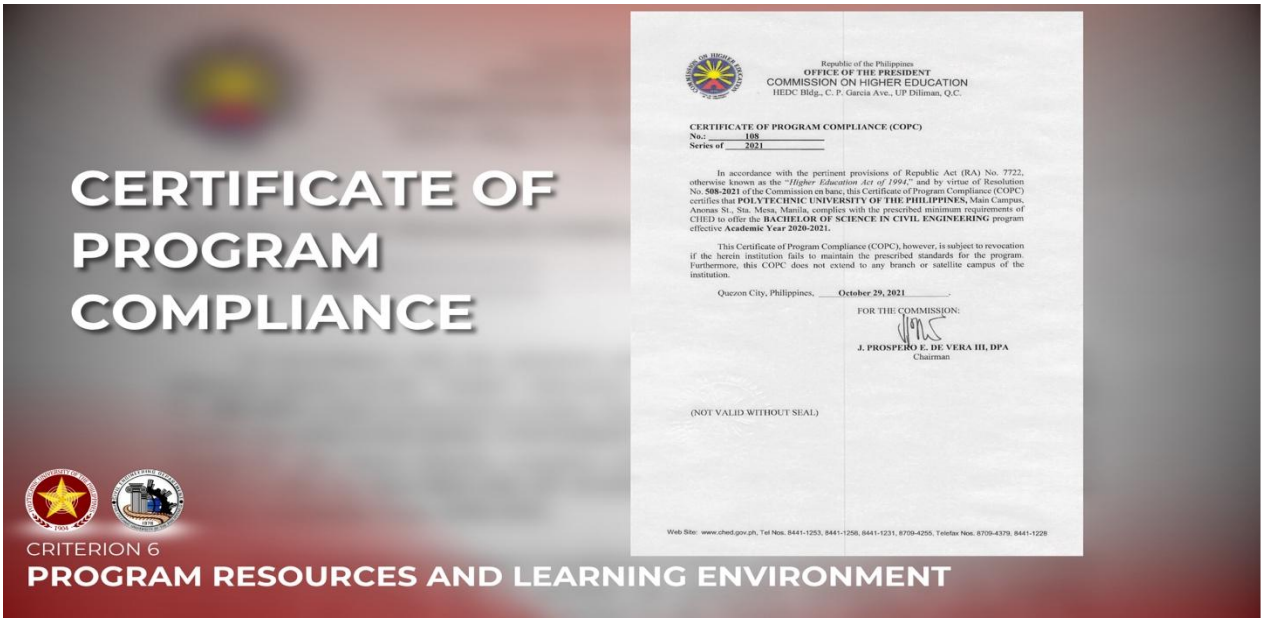
SIGNATURE REDACTED
CHARITO A. ZAMORA
Chairperson
Professional Regulation Commission

This Certificate of Compliance shall be valid for three (3) years from date of issuance.

ACD-IAM-09
Rev 00
2/15/2022

CRITERION 6
PROGRAM RESOURCES AND LEARNING ENVIRONMENT

Figure 6.44 *PRC Certificate of Compliance | Issued by the Professional Regulation Commission Board of Civil Engineering given last February 27, 2024 proving that the Bachelor's Degree in Civil Engineering is compliant and capable to deliver standard educational program for the said course as confirmed by the said governing body.*



CERTIFICATE OF PROGRAM COMPLIANCE

Republic of the Philippines
OFFICE OF THE PRESIDENT
COMMISSION ON HIGHER EDUCATION
HEDC Bldg., C. P. Garcia Ave., UP Diliman, Q.C.

CERTIFICATE OF PROGRAM COMPLIANCE (COPC)
No.: 108
Series of 2021

In accordance with the pertinent provisions of Republic Act (RA) No. 7722, otherwise known as the "*Higher Education Act of 1994*," and by virtue of Resolution No. **508-2021** of the Commission on banc, this Certificate of Program Compliance (COPC) certifies that **POLYTECHNIC UNIVERSITY OF THE PHILIPPINES,** Main Campus, Anonas St., Sta. Mesa, Manila, complies with the prescribed minimum requirements of CHED to offer the **BACHELOR OF SCIENCE IN CIVIL ENGINEERING** program effective **Academic Year 2020-2021.**

This Certificate of Program Compliance (COPC), however, is subject to revocation if the herein institution fails to maintain the prescribed standards for the program. Furthermore, this COPC does not extend to any branch or satellite campus of the institution.

Quezon City, Philippines, October 29, 2021.

FOR THE COMMISSION:

J. PROSPERO E. DE VERA III, DPA
Chairman

(NOT VALID WITHOUT SEAL)

Web Site: www.ched.gov.ph, Tel Nos. 8441-1253, 8441-1258, 8441-1231, 8709-4255, Telefax Nos. 8709-4379, 8441-1228

CRITERION 6
PROGRAM RESOURCES AND LEARNING ENVIRONMENT

Figure 6.45 *CHED Certificate of Program Compliance | Issued by the Commission on Higher Education (CHED) last October 29, 2021 certifying that the program meets and surpasses the minimum standards set by the government agency and deemed the program adequate for instruction.*

Existing CE Classroom:

Table 6.12 *Details of Existing CE Classroms.*

TYPICAL CLASSROOM SIZE (m^2)	HEIGHT (m)	NUMBER OF STUDENTS
94.5	4.5 m	90
63	4.5 m	60
31.5	4.5m	30

Validation Analysis: The Civil Engineering Department demonstrates a strong commitment to providing a high-quality academic environment by maintaining modern classrooms that closely align with the rigorous physical facility standards of CMO No. 92 s. 2017 CMO No. 86, Series of 2017 and National Building Code. With typical classroom sizes of 94.5, 63 and 31.5 square meters dedicated to sections of 30 to 40 students, the program achieves an efficient and focused learning density of 1.1 square meters per student, beyond the national benchmark while ensuring a personalized instructional atmosphere. To further enhance this educational experience, the department integrates high-standard lighting and consistent ventilation systems, including strategically placed air conditioning units and electric fans which ensure that every session remains conducive to complex technical learning and student comfort. This management of physical resources, combined with the strategic seating of individual armchairs and accessible multimedia tools, underscores the institution's dedication to fostering a professional and supportive environment that empowers students to attain their core competencies and excel in their academic pursuits.

Existing Laboratory Space and Configuration:

Table 6.13 *Typical Laboratory Capacity of the Civil Engineering Department*

TYPICAL LABORATORY WORKSPACE AREA (m^2)	HEIGHT (m)	MAX. NUMBER OF STUDENTS (5 student members per group)
94.5	4.5 m	35
63	4.5 m	23
144	4.5 m	53

Validation Analysis: The Civil Engineering Department demonstrates a proactive commitment to maintaining high-quality learning environments by providing specialized laboratories that range from 63 square meters to 144 square meters in area. By strategically organizing students into collaborative five-member groups, two (2) to three

(3) groups per laboratory shift (min. 1.5 hours), the department fosters a highly interactive and professional atmosphere that optimizes the use of technical apparatus and modern instrumentation. While this current configuration yields at least 3.0 square meters to per student, exceeds the benchmark of 2.0 square meters, the facility's layout is intentionally engineered to maximize safety and peer-to-peer engagement. This robust infrastructure, supported by modern ventilation and industry-standard safety protocols, ensures that students have ample space to conduct experimental research and develop the core technical competencies required for professional readiness in the civil engineering industry.

In support of the continuous improvement of the BSCE program, an additional laboratory building is currently under construction to expand and enhance the institution's laboratory facilities. Upon completion, the facility will provide dedicated laboratory spaces and additional resources that will further strengthen instruction, research, and practical training, in alignment with the program's developmental goals and applicable quality assurance standards.

Existing CE Laboratory Equipment:

The laboratory equipment of the Bachelor of Science in Civil Engineering (BSCE) laboratories was evaluated for compliance with the requirements specified in the applicable sections of CHED Memorandum Order (CMO) No. 92, Series of 2017.

The assessment confirmed that the laboratories are provided with the necessary equipment and facilities more than the minimum as **percentage compliance exceeds 100%** to support instruction, practical training, and the attainment of the program's intended learning outcomes.

Additional laboratory equipment is identified and endorsed through the University's Annual Procurement Planning process. Equipment with approved budget allocations is currently undergoing the procurement process in accordance with the University's established procurement policies and procedures (Attachment C6-12 - Compliance Assessment of CE Laboratory Equipment Based on CMO 92 s. 2017).

CMO COMPLIANCE OF TECHNICAL AND SCIENTIFIC EQUIPMENT
As of February 10, 2026

CIVIL ENGINEERING DEPARTMENT

FUNDAMENTALS OF SURVEYING 1									
NAME OF EQUIPMENT/ SPECIFICATION	CMO REQUIREMENT	EQUIPMENT ON-HAND	UNIT	ON-HAND QTY	OPERATIONAL STATUS	FINAL ON-HAND QTY	CMO COMPLIANCE	PERCENTAGE COMPLIANCE	REMARKS
CMO LE 1: Determination of Pace Factor									
Tape (Steel, Vinyl or Fiberglass, 30m or more)	5	Steel Tape	pcs.	8	Serviceable	34	Compliant	680.00%	Exceeds Requirement Several Units Need Replacement
		Steel Tape Brown		3	Serviceable				
		Steel Tape (100m)		3	Serviceable				
		Long Tape (30m)		5	Serviceable				
		Long Tape (50m)		2	For Purchase				
		Long Tape (60m)		13	For Purchase				
CMO LE 2: Measuring Distances on Level and Sloping Surfaces with a Tape									
Marking Pins	60		pcs.	63	Serviceable	63	Compliant	105.00%	Exceeds Requirement
Plumb Bob	5	With Chain	pcs.	3	Serviceable	16	Compliant	320.00%	Exceeds Requirement Several Units Need Replacement
		With Chain		4	Defective				
		Small		2	Serviceable				
		Medium		2	Serviceable				
		Big		1	Serviceable				
		Steel Plumb Bob		4	Serviceable				
Range Pole	5		pcs.	6	Serviceable	6	Compliant	120.00%	Exceeds Requirement
Ranging Rod	5		pcs.	10	Serviceable	10	Compliant	200.00%	Exceeds Requirement
Steel Tape	5	Steel Tape	pcs.	8	Serviceable	14	Compliant	280.00%	Exceeds Requirement
		Steel Tape Brown		3	Serviceable				
		Steel Tape (100m)		3	Serviceable				
CMO LE 3: Closed Transverse with a Compass									
Compass	5	Small	pcs.	4	Serviceable	7	Compliant	140.00%	Exceeds Requirement
		Big		3	Serviceable				
Marking Pins	60		pcs.	63	Serviceable	63	Compliant	105.00%	Exceeds Requirement
Tape (Steel, Vinyl or Fiberglass, 30m or more)	5	Steel Tape Brown	pcs.	3	Serviceable	34	Compliant	680.00%	Exceeds Requirement Several Units Need Replacement
		Steel Tape (100m)		3	Serviceable				
		Steel Tape		8	Serviceable				
		Long Tape (30m)		5	Serviceable				
		Long Tape (50m)		2	For Purchase				
		Long Tape (60m)		13	For Purchase				
CMO LE 4: Differential Leveling									
Engineer's Level, Dumpy Level, Automatic Level	5	Dumpy Level	pcs.	1	Serviceable	22	Compliant	440.00%	Exceeds Requirement
		Auto Level		20	Serviceable				
		Auto Level		1	Missing				

Figure 6.46 *Analysis of Compliance with CHED Minimum Requirements (CMO No. 92, s. 2017). An evaluation of laboratory technical and scientific equipment based on CHED-prescribed minimum laboratory requirements shows that Laboratory equipment requirement is met beyond the minimum.*

Existing Engineering Software Applications:

Validation Analysis: The engineering software applications utilized in the BSCE program are adequate to support the instructional, laboratory, design, and research requirements of the curriculum. These software resources provide students and faculty with the necessary tools for drafting, modeling, analysis, simulation, and project management, thereby facilitating the attainment of program outcomes and enhancing the development of professional competencies expected of Civil Engineering graduates.

Table 6.14 *Summary of Licensed Engineering Software Used in the BS Civil Engineering (BSCE) Program and Their Functional Applications*

CIVIL ENGINEERING SOFTWARE SUMMARY					
EXISTING SOFTWARE					
Area	**Software**	**Main Function**	**License Type**	**No. of Seats/ Licenses**	**Access Method Typical Users**
Drafting and Design	AutoCad	2D/3D Computer Aided Design and Drafting	Education	60 Seats	Email/ Autodesk Account
	Midas CAD	Specialized Engineering CAD Platform	Subscription	60 Licenses	Network License
	Midas Drawing	Automated Structural Shop Drawing Generation	Subscription	60 Licenses	Network License
Structural Engineering/ Bridge Engineering	Midas Gen	General Building Analysis and Design	Subscription	60 Licenses	Network License
	Midas Civil	Bridge and Civil Infrastructure Analysis	Subscription	60 Licenses	Network License
	Midas Design+	Structural Component Design (RC & Steel)	Subscription	60 Licenses	Network License
	Structural Engineering Virtual Lab	Structural Behavior and Load Analysis	Perpetual License	Per user	Desktop
BIM Modelling	Midas NGen	Integrated Building Modeling and Analysis	Subscription	60 Licenses	Network License
Geotechnical Engineering	Midas Soilworks	2D Geotechnical Analysis (Tunnel, Slope, Soil)	Subscription	60 Licenses	Network License
Geospatial Analysis/	ArcGIS	Mapping and Geographic	Subscription	60 Seats	Network License

Surveying and mapping		Information System			
Fluid Mechanics/ Hydraulics	Fluid Mechanics Virtual Laboratory	Simulate fluid properties and basic pipe flow.	Perpetual License	Unlimited	Desktop
Water Resources Engineering	Complex Hydraulics Virtual Lab	Analyze advanced water systems and open channel flow.	Perpetual License	Unlimited	Desktop
Construction Materials and Testing/ Concrete Technology	Complex Constructio n Material Testing Virtual Lab	Test structural material properties and concrete strength.	Perpetual License	Unlimited	Desktop
Engineering Physics	General Physics Virtual Lab	Simulate fundamental mechanics and physical principles.	Perpetual License	Unlimited	Desktop
SOFTWARE ON GOING PROCUREMENT					
Area	**Software**	**Main Function**	**License Type**	**No. of Seats/ Licenses**	**Access Method Typical Users**
Multidisciplin e	Multiphysics Simulation Software	Finite Element Simulation for Structural Engineering, Geotechnical Engineering, Fluid Mechanics, Thermal Engineering, and Computational Engineering	Perpetual	60	Network License
Structural Engineering	Structural Analysis and Design Software	Used for general structural analysis	Perpetual	7	Network License

Railway Engineering	Railway Power System Software	Analysis and simulation of electrical traction power for railway networks.	Perpetual	3	Network License
	Railway Simulation and Rail Design Software	Integrated railway track alignment, geometry design, and operational simulation.	Perpetual	4	Network License
Transportation Engineering	Transportation Planning and Mobility Simulation Software	Traffic Operations Analysis and Optimization, Travel Demand Forecasting and Evaluation	Perpetual	2	Network License

Table 6.15 *Summary of Licensed Engineering Software Used in the BS Civil Engineering (BSCE) Program and Their Functional Applications*

LIST OF FREE EDUCATIONAL ACCESS TO AUTODESK AND MICROSOFT PRODUCTS AND SERVICES TO ELIGIBLE PUP STUDENTS AND EDUCATORS		
ENGINEERING/ARCHITECTURE		
1	AutoCAD	Software for 2D and 3D computer-aided design, drafting, and detailing.
2	AutoCAD Suite	Specialized toolsets (AutoCAD Architecture, AutoCAD Electrical, AutoCAD Mechanical)
3	AutoCAD LT	Cost-effective version optimized for precise 2D drafting.
4	Revit	Advanced Building Information Modeling (BIM) software for structural engineering, MEP (mechanical, electrical, plumbing), and architectural design.
5	Civil 3D	Civil engineering design and documentation software for infrastructure, land development, and transportation projects.

6	Forma Site Design	Cloud-connected site planning, conceptual design exploration, and AI-powered early-stage environmental analyses.
7	Navisworks Manage	Project review software for 3D coordination, clash detection, 4D simulation, and scheduling analysis.
8	Robot Structural Analysis Professional	Advanced structural load analysis software to verify structural compliance against global codes.
9	Advance Steel	3D modeling software specialized for structural steel detailing, fabrication, and structural engineering.
PRODUCT DESIGN AND MANUFACTURING		
1	Inventor Professional	3D mechanical engineering, product design, simulation, sheet metal design, and tooling software.
2	Fusion	An integrated, cloud-powered CAD, CAM, CAE, and PCB electronics platform
3	Fusion Extensions	Generative design and advanced manufacturing add-ons available through the academic portal.
4	Alias AutoStudio	Surface modeling, automotive design, styling, and technical surfacing tools.
5	Vault Professional	Product Data Management (PDM) software to securely track, organize, and manage engineering data and revisions.
6	FeatureCAM / PowerMill / PowerShape	Advanced computer-aided manufacturing (CAM) toolpath generation software for high-speed, multi-axis CNC machining.
MEDIA AND ENTERTAINMENT		
1	3ds Max	Professional 3D modeling, animation, rendering, and visual effects software optimized specifically for Windows.
2	Maya	3D computer graphics software for character creation, texturing, rigging, and complex animation pipelines.
3	Arnold	An advanced Monte Carlo ray-tracing renderer integrated directly into Maya and 3ds Max workflows.
4	MotionBuilder	Real-time 3D character animation software optimized for virtual production, motion capture, and game cinematic creation.
5	Mudbox	Digital 3D sculpting and high-resolution texture painting software.

6	Flow Studio / Flow Production Tracking	Cloud-based production tracking and review tools tailored for creative animation and VFX teams.
PROGRAMMING AND SOFTWARE DEVELOPMENT		
1	Microsoft Visual Studio Dev Essentials	Software development, programming, debugging, testing, cloud development, and developer resources

Virtual Laboratory for the BS Civil Engineering Program

Virtual laboratory programs serve as an alternative learning environment when access to physical laboratories is limited. Disruptions such as pandemics, extended suspensions of in-person classes, severe typhoons, flooding, and extreme heat conditions may prevent students from conducting laboratory activities on campus.

The use of virtual laboratory platforms helps maintain the continuity of instruction by enabling students to participate in laboratory-related activities remotely. Through these digital resources, students can continue performing simulations, making observations, analyzing results, and interpreting engineering concepts essential to the development of their technical and professional competencies.

- **Building Materials Virtual Lab**
- **Self-Compacting Concrete Virtual Lab**
- **Open Channel Hydraulics Virtual Lab**
- **Water Supply Networks Virtual Lab**
- **Mechanics of Solids Bodies and Liquids Virtual Lab**
- **Translational and Rotational Motion Virtual Lab**
- **Mechanical Oscillations and Waves Virtual Lab**

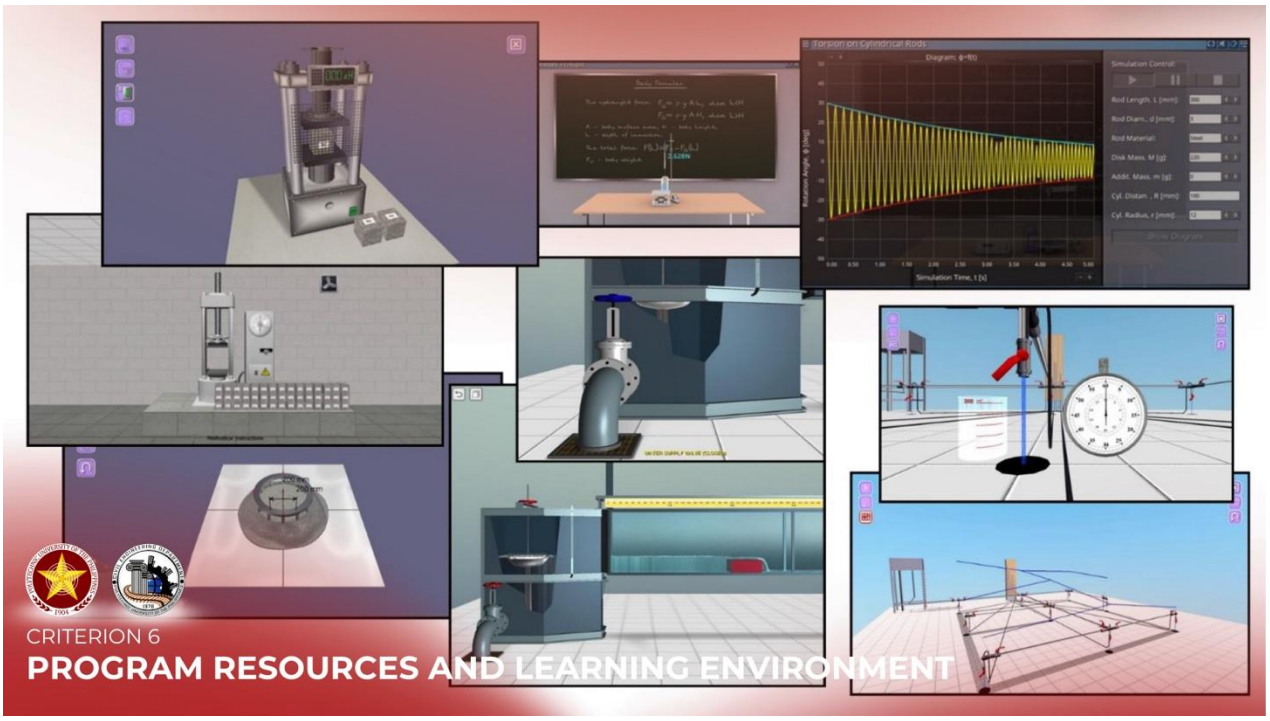


Figure 6.47 *Screenshots of the various Virtual Laboratories available to the students and instructors of the Department of Civil Engineering that serve as an alternative learning environment when access to physical laboratories is limited*

The Building Materials Virtual Laboratory and Self-Compacting Concrete Virtual Laboratory enable students to examine the properties and performance of construction materials through simulated experiments. These platforms support activities related to material testing, concrete mix design, characterization, and evaluation of engineering properties. They also help students understand material selection, quality control, durability, and construction performance. Since experiments may be repeated under different conditions, students can further strengthen their analytical skills and understanding of construction engineering concepts.

The Open Channel Hydraulics and Water Supply Networks Virtual Laboratories support instruction in hydraulics and water resources engineering. Through simulations, students can observe fluid behavior, flow characteristics, energy losses, channel performance, pipe network operations, and system responses under varying conditions. These activities help learners connect theoretical principles with actual engineering applications. By adjusting parameters and reviewing the resulting changes, students develop their ability to analyze data, compare alternatives, and make sound engineering decisions for water-related systems.

The virtual laboratory modules on Mechanics of Solid Bodies and Liquids, Translational and Rotational Motion, and Mechanical Oscillations and Waves strengthen students'

foundations in science and engineering. The simulations allow them to explore concepts involving force, motion, equilibrium, deformation, fluid behavior, vibrations, and waves. Through interactive activities, students can better visualize principles that may be difficult to demonstrate in a classroom setting and relate these concepts to civil engineering analysis and design.

Table 6.16 *Summary of Supported Laboratory and Lecture Courses of Civil Engineering Virtual Laboratory Programs*

Virtual Laboratory Package	**Virtual Experiments**	**Laboratory Courses** *(Virtual Lab as Alternative for Experiments)*	**Lecture Courses** *(Virtual Lab as Instructional Aid)*
Building Materials Virtual Lab	Bending Strength Bulk Density Compressive Strength Non-Destructive Method Normal Density Setting Time True Density	Construction Materials and Testing, Building Systems and Design	Construction Materials and Testing, Building Systems and Design
Self-Compacting Concrete Virtual Lab	Compress Strength J-Ring Test L-Box Test Slump-Flow Test V-Funnel Test	Construction Materials and Testing	Construction Materials and Testing
Open Channel Hydraulics	Labwork - 2m Channel Labwork - 15m Channel Surface Editor	Hydraulics 2	Hydraulics 2
Water Supply Networks	Water Supply Networks Virtual Lab	Hydraulics 2	Hydraulics 2
Mechanics of Solids Bodies and Liquids	Lab 1 - Hookes Law Lab 2 - Lever Lab 3 - Parallelogram of Forces Lab 4 - Inclined Plane Lab 5 - Friction	Physics for Engineers (Calculus-based)	Statics of Rigid Bodies, Physics for Engineers (Calculus-based)
	Lab 6 - Bending of Beams Lab 7 - Torsion		Mechanics of Deformable Bodies,

Virtual Laboratory Package	**Virtual Experiments**	**Laboratory Courses** *(Virtual Lab as Alternative for Experiments)*	**Lecture Courses** *(Virtual Lab as Instructional Aid)*
			Physics for Engineers (Calculus-based)
	Lab 8 - Viscosimeter Lab 9 - Surface Tension Lab 10 - Archimedes Principle	Hydraulics 1 Physics for Engineers (Calculus-based)	Hydraulics 1, Physics for Engineers (Calculus-based)
Translational and Rotational Motion	Lab 1 - Uniform Accel Motion Lab 2 - Motion with Uniform Accel Lab 3 - Laws of Collisions Lab 4 - Free Fall Lab 5 - Inclined Launch Lab 6 - Gyroscope Lab 7 - Rotational Motion Lab 8 - Mom Inertia of Horizontal Rod Lab 9 - Mom Inertia of Various Bodies Lab 10 - Maxwells Wheel	Physics for Engineers (Calculus-based)	Physics for Engineers (Calculus-based) Dynamics of Rigid Bodies
Mechanical Oscillations and Waves	Lab 1 - Harmonic Oscillation Lab 2 - Elliptical Oscillation Lab 3 - Variable g Pendulum Lab 4 - Reversible Pendulum Lab 5 - Simple Harmonic Oscillations Lab 6 - Pohls Torsion Pendulum Lab 7 - Forced Harmonic Oscillation Lab 8 - Coupled Oscillations Lab 9 - Mechanical Waves Lab 10 - Speed of Sound in Air Lab 11 - Standing Sound Waves Lab 12 - Sound in Rods	Physics for Engineers (Calculus-based)	Physics for Engineers (Calculus-based) Dynamics of Rigid Bodies

Validation/Evidence of Good Practices Related to the Environment, Health and Safety

The Civil Engineering Department strictly adheres to comprehensive safety protocols and environmental stewardship, aligning its operational practices with national regulations, institutional policies, and established health and safety standards. To mitigate chemical hazards and environmental impacts, laboratory personnel and students are required to follow prescribed procedures for the handling, storage, and disposal of chemicals and laboratory materials. Safety, laboratory safety manuals, and operational guidelines are made available to laboratory users to promote awareness and compliance with safety requirements.

Laboratory facilities are provided with appropriate safety equipment and emergency response resources, including fire extinguishers, first-aid kits, emergency exits, and safety signage. Regular inspection and maintenance of laboratory equipment, electrical installations, and safety devices are conducted to ensure their functionality and compliance with institutional safety requirements. Students are oriented on laboratory safety procedures prior to the conduct of experiments and are required to observe the proper use of personal protective equipment (PPE) whenever necessary.
The Department also promotes environmental responsibility through waste minimization practices, proper segregation and disposal of solid waste, efficient utilization of water and energy resources, and compliance with campus environmental policies. Housekeeping measures are regularly implemented to maintain cleanliness, orderliness, and safe working conditions within classrooms, laboratories, and other instructional spaces.

To support continuous improvement, the Department coordinates with the University's health, safety, and environmental offices in conducting safety orientations, inspections, emergency preparedness activities, and other initiatives that foster a culture of safety, environmental awareness, and shared responsibility among students, faculty members, and staff (Attachment C6-13 - Health and Safety).

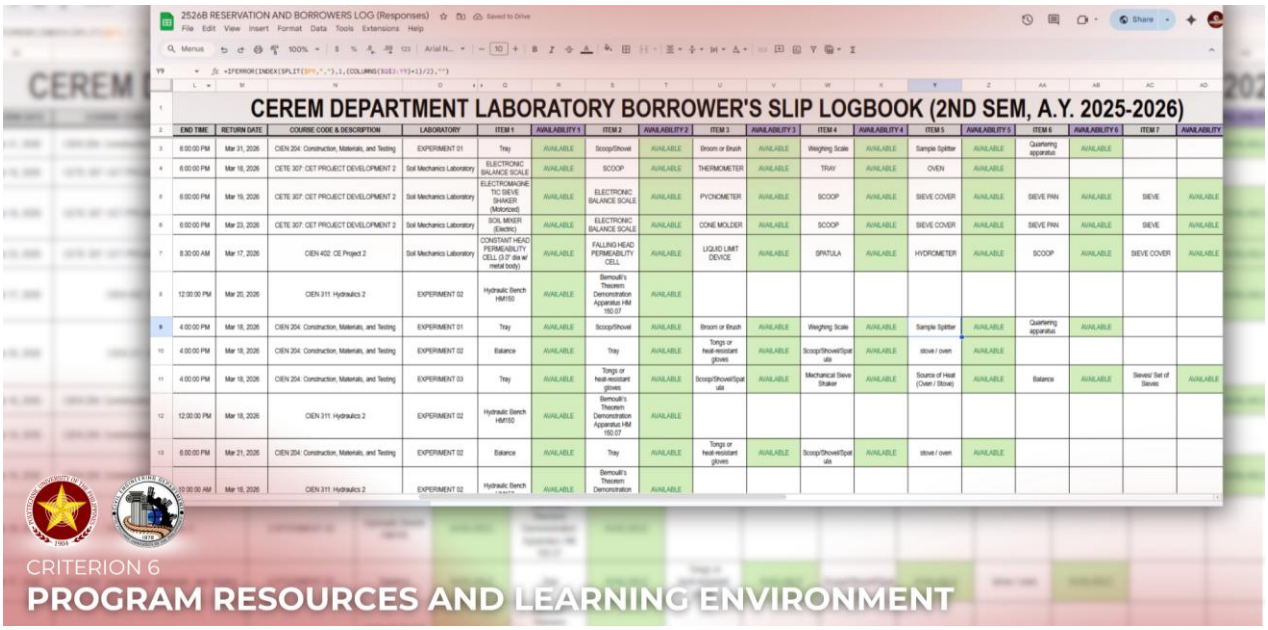


Figure 6.48 *Daily Equipment Reservation Availability Monitoring. A digital monitoring system used to track equipment reservations and availability, supporting efficient scheduling, resource allocation, and laboratory operations management.*

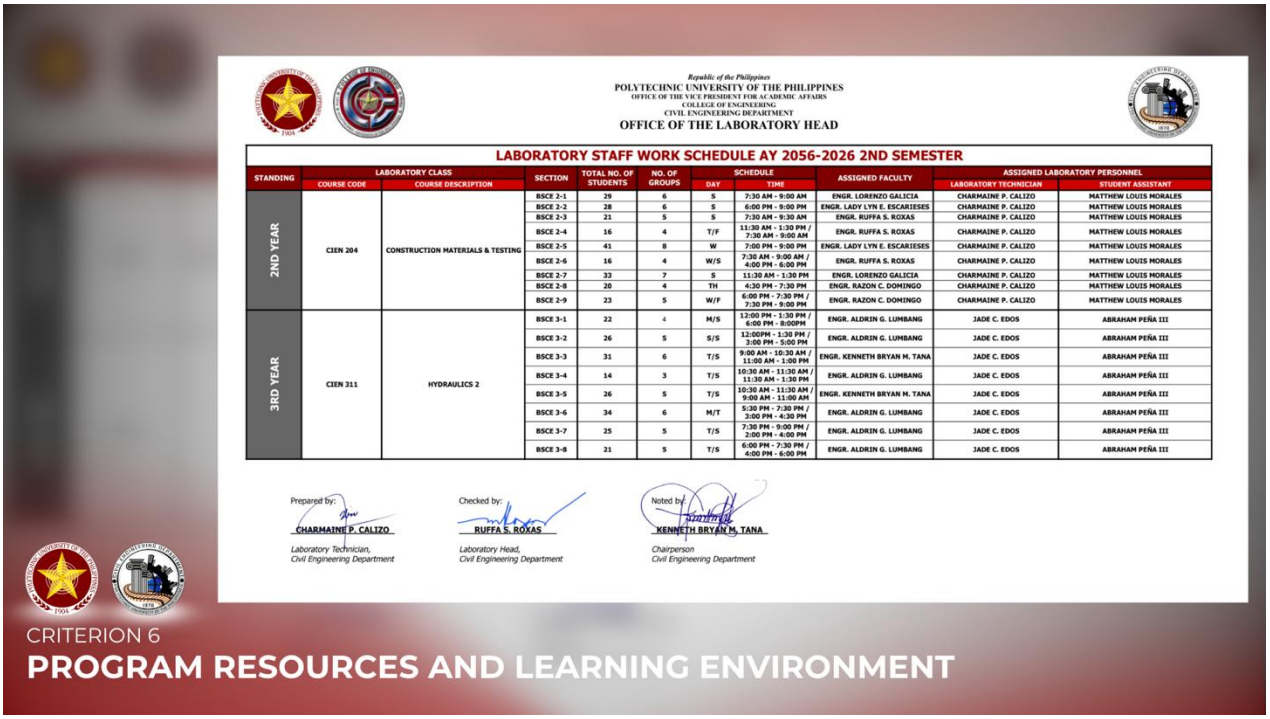


Figure 6.49 *Laboratory Staff Work Schedule. A structured schedule outlining laboratory classes, assigned faculty, laboratory personnel, and student assistants to ensure organized laboratory operations, proper supervision, and efficient delivery of instructional activities.*

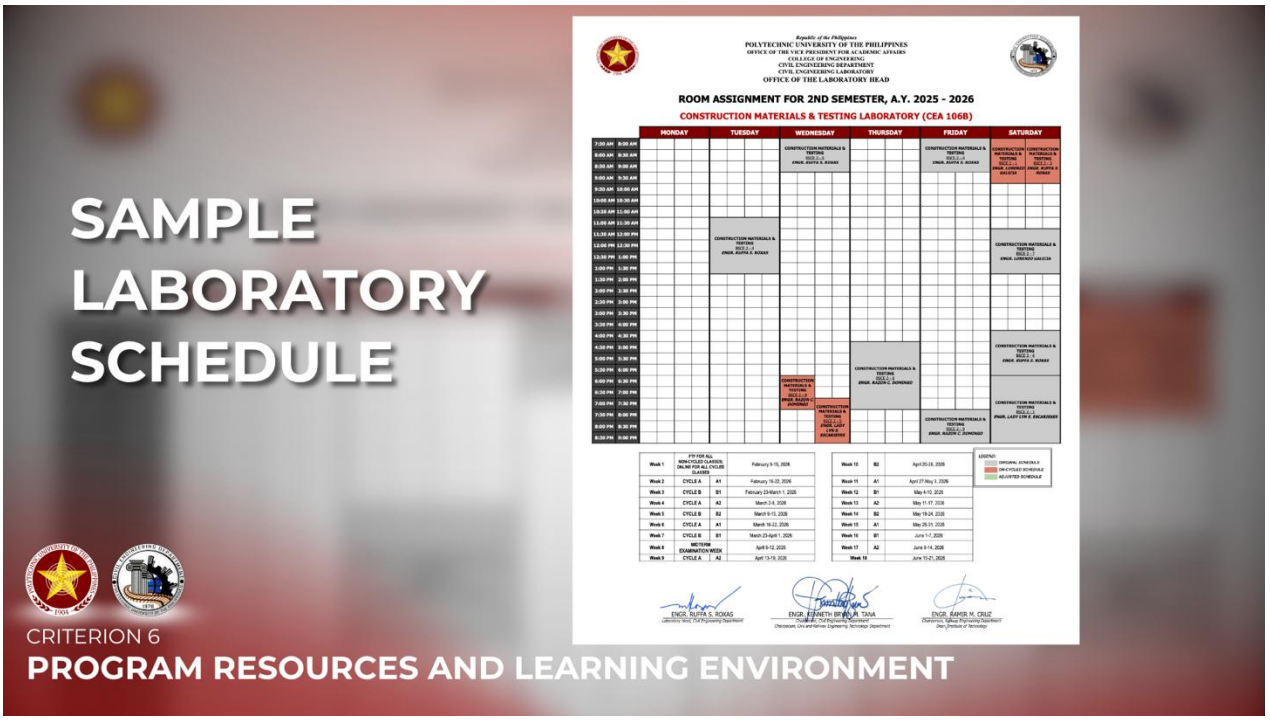


Figure 6.50 *Sample Laboratory Schedule (Construction Materials and Testing Laboratory). The schedule presents the assigned laboratory classes, faculty, and time slots to ensure organized room utilization, proper coordination, and efficient conduct of laboratory activities.*

The program also observes the **adequacy of laboratory equipment set-up in relation to the typical group size of students** during laboratory activities. This is done to ensure that the available apparatus, instruments, tools, and workstations are sufficient to support effective hands-on learning, proper student participation, and safe laboratory performance. In the conduct of laboratory classes, students are organized into manageable groups based on the nature of the experiment, the number of available equipment, and the required level of student engagement. The Department ensures that each group has reasonable access to the necessary laboratory equipment so that students can actively participate in the procedures, perform required measurements, record observations, and analyze results without excessive waiting time or overcrowding.

This practice supports the attainment of course and program outcomes by providing students with meaningful exposure to actual laboratory operations and engineering applications. It also helps maintain an organized, safe, and conducive learning environment where laboratory resources are utilized efficiently and equitably among students (Attachment C6-14 - Assessment of Adequacy of CE Facilities and Learning Resources AY 2025-2026 2nd Semester).

Donation and Support from the CE Alumni

The alumni of the Civil Engineering Department of the Polytechnic University of the Philippines (PUP) continue to play an active and meaningful role in supporting the department through the donation of laboratory equipment and apparatus. This initiative reflects their enduring commitment to their alma mater and their desire to contribute to the continuous improvement of laboratory instruction and student learning. By providing additional tools, instruments, and apparatus for laboratory use, the alumni help strengthen the department's resources and expand the opportunities for students to engage in hands-on, practice-based learning experiences.

Figure 6.51 *Civil Engineering alumni formally donate laboratory equipment to support academic and instructional activities*

Figure 6.52 *Strengthening laboratory resources through alumni support. Surveying instruments and equipment donated by Civil Engineering alumni enhance the capacity of the laboratories, contributing to improved instruction, hands-on training, and the continuous development of future engineers.*

These donations are important because they help enhance the quality of laboratory instruction by ensuring that students have access to the equipment needed for experiments, demonstrations, and practical applications in various civil engineering courses. The availability of adequate and functional laboratory apparatus allows students to better understand engineering concepts, perform tests more effectively, and gain actual experience in the use of tools and materials commonly encountered in professional practice. In this way, alumni support helps the department maintain a learning environment that is more responsive to the needs of students and aligned with the practical demands of the civil engineering profession.

Moreover, the donation of equipment and apparatus contributes significantly to the attainment of student outcomes. With improved laboratory resources, students are better able to develop competencies in conducting experiments, analyzing and interpreting data, applying engineering principles, and using appropriate tools and techniques in solving engineering problems. These experiences also strengthen their ability to work responsibly, observe safety procedures, and appreciate the value of accuracy, discipline, and professionalism in laboratory practice. Through these contributions, alumni support not only enriches the department's facilities but also directly supports the development of the knowledge, skills, and professional attitudes expected of Civil Engineering graduates under outcomes-based education. The table below shows the list of donated equipment and apparatus.

(See Attachment C6-15 - Deed of Donation)
(See Attachment C6-16 - Technical Reports on the Donation of BSCE Alumni)

Table 6.17 *List of Equipment and Apparatus Donated*

Article/Item	Description	Quantity per Physical Count	Donated by
RTK GNSS	Emlid Reach RS1	12	Engr. Rizaldy Mariano
Tribach	No Brand	1	Engr. Rizaldy Mariano
Automatic Level	CM-24 Can Measure	10	Engr. Rizaldy Mariano
Axe	Master Craft	10	Engr. Rizaldy Mariano
Bubble Level	No Brand	8	Engr. Rizaldy Mariano
Chaining Tags	No Brand	11	Engr. Rizaldy Mariano

Tape Clamping Handle	Yamayo	19	Engr. Rizaldy Mariano
Cleaning Kit (Black)	No Brand	9	Engr. Rizaldy Mariano
Cleaning Kit (Grey)	No Brand	4	Engr. Rizaldy Mariano
Compass/Clinometer	Suunto, Eyeskey	14	Engr. Rizaldy Mariano
Epoxy Rebar	No Brand	1	Engr. Rizaldy Mariano
Handheld Sight Level	Johnsons	7	Engr. Rizaldy Mariano
Levelling Rods	No Brand	10	Engr. Rizaldy Mariano
Levelling Rod Case (bundle with levelling rod)	No Brand	10	Engr. Rizaldy Mariano
Marking Pins (5 pc per set)	No Brand	11	Engr. Rizaldy Mariano
Orange Tape (Consumable)	No Brand	1	Engr. Rizaldy Mariano
Pink Tape (Consumable)	No Brand	3	Engr. Rizaldy Mariano
Plumb Bob	No Brand	8	Engr. Rizaldy Mariano
Rubber Mallet	No Brand	1	Engr. Rizaldy Mariano
Spring Balance	No Brand	3	Engr. Rizaldy Mariano
Steel Tape Orange	Jajima, Laufkin	14	Engr. Rizaldy Mariano
Theodolite	Leica	10	Engr. Rizaldy Mariano
Tripod	Leica	10	Engr. Rizaldy Mariano
Wooden Temperature Correction	Lufkin	3	Engr. Rizaldy Mariano
Folding Working Tables	No Brand	12	PUP BSCE Batch ‘99 and Friends
Steel Rack	No Brand	1	PUP BSCE Batch ‘99 and Friends
Set of Sieves (Stainless)	No Brand	1	PUP BSCE Batch ‘99 and Friends

Tripod	No Brand	1	PUP BSCE Batch '99 and Friends
Level Staff	No Brand	1	PUP BSCE Batch '99 and Friends
Automatic Level	TOPCON AT-B4	1	PUP BSCE Batch '99 and Friends

A.5. SUPPORT FACILITIES

[Support facilities such as sports and recreational centers, health and wellness center, student center, among others.]

A.5.a STUDY AREAS

The university provides adequate study areas and library facilities to support students in their studies, assignments, and research activities. These learning spaces are strategically distributed across the campuses to ensure accessibility and to address both general and program-specific academic needs.

At the Main Campus, students may use the Reading Area located in the Main Academic Building, which has a total area of 36.68 square meters and a seating capacity of 20. The University Library, located on the third floor of the NALLRC Building, houses the Reference Section and the Filipiniana Section, each serving students in a spacious area of 648.00 square meters with a seating capacity of 324. Also located in the same building is the Rare Book Collection Room, which has a total area of 34.65 square meters and can accommodate 17 users.

At the NDC Campus, the College of Engineering and Architecture has its own library facilities to serve the needs of its students. The CE Mini Library, located in Room 109B of the CEA Building, has an area of 31.50 square meters and a seating capacity of 16. In addition, the CEA Library, located in Room 410 of the CEA Building, provides a larger study and research space with a total area of 85.40 square meters and a seating capacity of 43 (Attachment C6-17 - Photo Documentation of Study Areas).

These facilities listed in Table 6-4 demonstrate the university's commitment to providing students with conducive spaces for independent learning, academic collaboration, and research work.

Table 6.18 *Study Areas Information*

Room Name	Total Area (m^2)	Location	Capacity
Reading Area	36.68	Mabini Campus (Main Academic Building)	20
University Library (Reference Section)	648.00	Mabini Campus 3rd Floor NALLRC Building	324
University Library (Filipiniana Section)	648.00	Mabini Campus 3rd Floor NALLRC Building	324
Rare Book Collection Room	34.65	Mabini Campus 3rd Floor NALLRC Building	17
CE Mini Library	31.50	NDC Campus Room 109B CEA Building	16
CEA Library	85.40	NDC Campus Room 410 CEA Building	43

University Library

The Ninoy Aquino Library and Learning Resource Center (NALLRC) serves as one of the primary support facilities of the Polytechnic University of the Philippines (PUP) in delivering quality education, including the BS Civil Engineering program. Strategically located at the northwest side of the Mabini Campus, adjacent to the Main Academic Building, the NALLRC plays a critical role in facilitating student learning, research, and academic development.

The facility is a multi-functional academic resource hub that houses a comprehensive array of educational and administrative units. These include the main library sections such as the Archives, Filipiniana, Periodicals, and Reference areas, as well as support offices like the Information and Communications Technology Office (ICTO), the Open University System (OUS), the Quality Assurance Center (QAC), and classrooms for the College of Law (CL). The integration of these facilities within a single building fosters a collaborative,

accessible, and well-organized academic environment that benefits students and faculty alike.

Figure 6.53 *Ninoy Aquino Library and Learning Resource Center (NALLRC) at the Polytechnic University of the Philippines (PUP), serving as the primary academic resource facility for information access, research, and learning support services.*

In support of achieving the Civil Engineering Program's Student Outcomes, the NALLRC enhances students' access to updated technical literature, codes and standards, engineering journals, and digital learning platforms. It supports the development of critical thinking, independent learning, and research capabilities among civil engineering students, which are essential in meeting outcomes such as the ability to analyze and solve complex engineering problems, engage in lifelong learning, and communicate effectively in multidisciplinary contexts.

In terms of its physical attributes, the NALLRC spans a total floor area of 9,840.00 square meters and is equipped with:

- 22 Office Rooms, which accommodate administrative and academic staff to provide direct student support and academic services;
- 34 Classrooms, which may be utilized for lectures, reviews, and academic enrichment sessions;
- 9 Laboratories, supporting practical and experimental learning, especially in courses that require computation, simulation, or technical application;
- 14 Restrooms, ensuring accessibility and convenience for all users;

- 11 Function Rooms, which can be used for seminars, training sessions, group studies, and institutional events.

Collectively, these facilities help maintain a conducive learning environment that supports the academic and personal growth of Civil Engineering students. The NALLRC exemplifies PUP's commitment to providing adequate and quality physical and academic resources necessary for the effective delivery of its engineering programs.

Table 6.19 *NALLRC information*

Total area (m^2)	Total No. of Office Room	Total No. of Classroom	Total No. of Laboratory	Total No. of Restroom	Total No. of Function Room
9,840.00	22	34	9	14	11

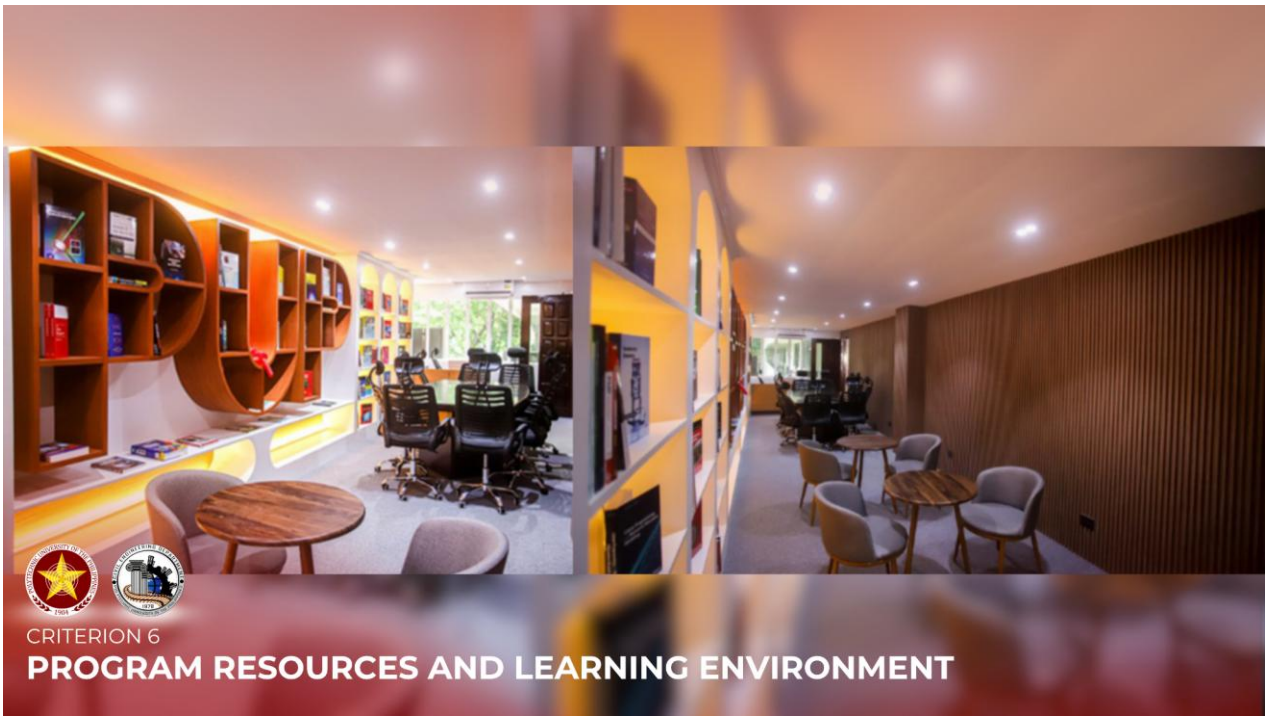


Figure 6.54 *University Library and Learning Resource Center at the Polytechnic University of the Philippines (PUP), providing modern reading, research, and collaborative spaces that support academic study and knowledge development.*

Coworking and Collaborative Spaces (with Internet Access)

The Polytechnic University of the Philippines provides **coworking and collaborative spaces with internet access** within the **Ninoy Aquino Library and Learning Resource Center (NALLRC)** to support students' academic, research, and ICT-related activities. These spaces are designed to facilitate group work, digital collaboration, and access to

online resources, making them particularly relevant for tasks involving information and communication technology (ICT).

Equipped with reliable internet connectivity and multimedia tools, the facility enables students to engage in activities such as data analysis, virtual meetings, programming, and the use of specialized software applications. The environment promotes efficient information exchange and supports the development of digital competencies essential for modern engineering and academic practice.

Overall, the co-working spaces in the NALLRC strengthen the University's ICT infrastructure by providing accessible, technology-enabled environments that foster collaboration, innovation, and the effective use of digital tools in learning and research.

Figure 6.55 *Coworking and meeting space with internet access at the Polytechnic University of the Philippines (PUP), designed to support collaborative work, discussions, and digital connectivity within an academic environment.*

A.5.b. Research Centers, Research Institutes and Laboratories

The University has buildings that provide Research Centers and Laboratories located strategically in different campuses under different programs.

Engineering Science and Research Center (ESRC)

The Engineering Science and Research Center (ESRC), located at the right portion of the Polytechnic University of the Philippines (PUP) Mabini Campus, serves as a vital hub for laboratory instruction, interdisciplinary collaboration, and research-driven learning. This facility supports various colleges within the University, including the Departments of Civil Engineering, Electrical and Mechanical Engineering, Architecture, Science, Computer and Information Science, and the Institute of Technology. Its integrated structure promotes a unified research environment where students from different disciplines engage in hands-on learning, applied experimentation, and technical analysis essential to their academic training.

The ESRC significantly contributes to the attainment of student outcomes for the BS Civil Engineering program by offering access to specialized laboratories that support instruction in structural analysis, materials testing, environmental systems, and computer-aided engineering applications. Through these resources, students are equipped with the necessary practical skills, critical thinking capabilities, and problem-solving competencies that align with the program's desired graduate attributes.

Physically, the ESRC encompasses a total area of 1,282.00 square meters and features key infrastructure that includes one office room, one classroom, eight well-equipped laboratories, eight restrooms, and a roof deck function hall. These facilities are designed to support both instructional delivery and institutional events such as research defenses, academic seminars, and training workshops. Overall, the ESRC stands as a testament to PUP's commitment to providing accessible and high-quality support facilities that enhance student learning and research excellence in engineering education.

Table 6.20 *ESRC information*

Total area (m^2)	Total No. of Office Room	Total No. of Classroom	Total No. of Laboratory	Total No. of Restroom	Total No. of Function Room
1,282.00	1	1	8	8	1

Figure 6.56 *Engineering Science and Research Center (ESRC) at the Polytechnic University of the Philippines (PUP), inaugurated on January 7, 2019, serving as a hub for advanced research and academic innovation.*

Research Institute for Science and Technology (RIST)

The Research Institute for Science and Technology (RIST) of the Polytechnic University of the Philippines, located at the main campus, serves as a central hub for interdisciplinary research and innovation. It integrates holistic programs aimed at advancing knowledge across the life sciences, physical sciences, mathematics, engineering, and computing and information sciences. Through these initiatives, RIST supports the University's commitment to producing high-quality research that addresses national priorities and global challenges aligned with the Sustainable Development Goals (SDGs).

Under the leadership of Director **Dr. Armin S. Coronado**, RIST fosters a dynamic research environment that promotes collaboration, innovation, and academic excellence. The institute conducts high-quality original research across a wide range of disciplines, enabling faculty and researchers to contribute meaningful solutions to complex societal and technological issues. Its multidisciplinary approach strengthens the University's research capacity and enhances its role as a knowledge-generating institution.

RIST operationalizes its mandate through its research centers, which implement science and technology plans, programs, and strategies grounded in research and development activities. These centers facilitate interdisciplinary collaboration and provide platforms for the generation, application, and dissemination of new knowledge. Through this structure,

the institute ensures that research outputs are relevant, impactful, and responsive to emerging societal needs.

Guided by its core functions, RIST focuses on: (1) conducting research, (2) establishing linkages and collaborative partnerships, (3) evaluating and publishing research outputs, and (4) providing research capability programs. These functions collectively strengthen the research culture of the University, support faculty and student development, and contribute to the advancement of science and technology in alignment with both national development goals and global sustainability agendas.

Figure 6.57 *Official page banner of the Research Institute for Science and Technology (RIST) at the Polytechnic University of the Philippines (PUP), representing its role in advancing multidisciplinary research and innovation.*

Research Institute for Sustainable Engineering (RISE)

The PUP Research Institute for Sustainable Engineering (RISE) is housed at the Condo Tel, adjacent to the CEA Building. Its location provides convenient access to faculty members, researchers, and students of the College of Engineering and Architecture, making it an accessible center for research and innovation. As a specialized research facility, RISE serves as a venue for the conduct of studies, projects, and collaborative activities related to sustainable engineering and allied fields.

The institute supports the university's commitment to advancing research, innovation, and development by promoting sustainable solutions to engineering challenges. It provides an environment where researchers and students can engage in knowledge creation, applied studies, and interdisciplinary collaboration aimed at addressing current and emerging concerns in sustainability. Through its presence, the PUP Research Institute for Sustainable Engineering strengthens the research culture of the university and contributes to the development of relevant and responsive engineering practices.

A.5.c. Student Centers

The University provides student centers as dedicated spaces that promote a conducive and supportive environment for learning, interaction, and student development. These facilities serve not only as areas for study and academic collaboration, but also as venues for various institutional and student-related activities such as seminars, College Week celebrations, meetings, and other events. Through these student centers, the University ensures that students have access to functional spaces that contribute to both their academic and extracurricular growth (Attachment C6-18 - Photo Documentation of Student Centers).

Among these facilities is the Charlie Del Rosario Student Center, located on the ground floor of the Charlie Del Rosario Building, with an area of 1,200.00 square meters and a seating capacity of 500. At the NDC Campus, the Gabriela Silang Study Area (CEA), located on the ground floor of the Gabriela Silang Building, has an area of 121.80 square meters and can accommodate 100 students. Also in the same building, the Gabriela Silang Multipurpose Hall (CEA), situated on the second floor, has a total area of 91.35 square meters and a capacity of 75.

Figure 6.58 *Charlie del Rosario Building at the Polytechnic University of the Philippines (PUP), serving as a student center and venue for academic and extracurricular activities.*

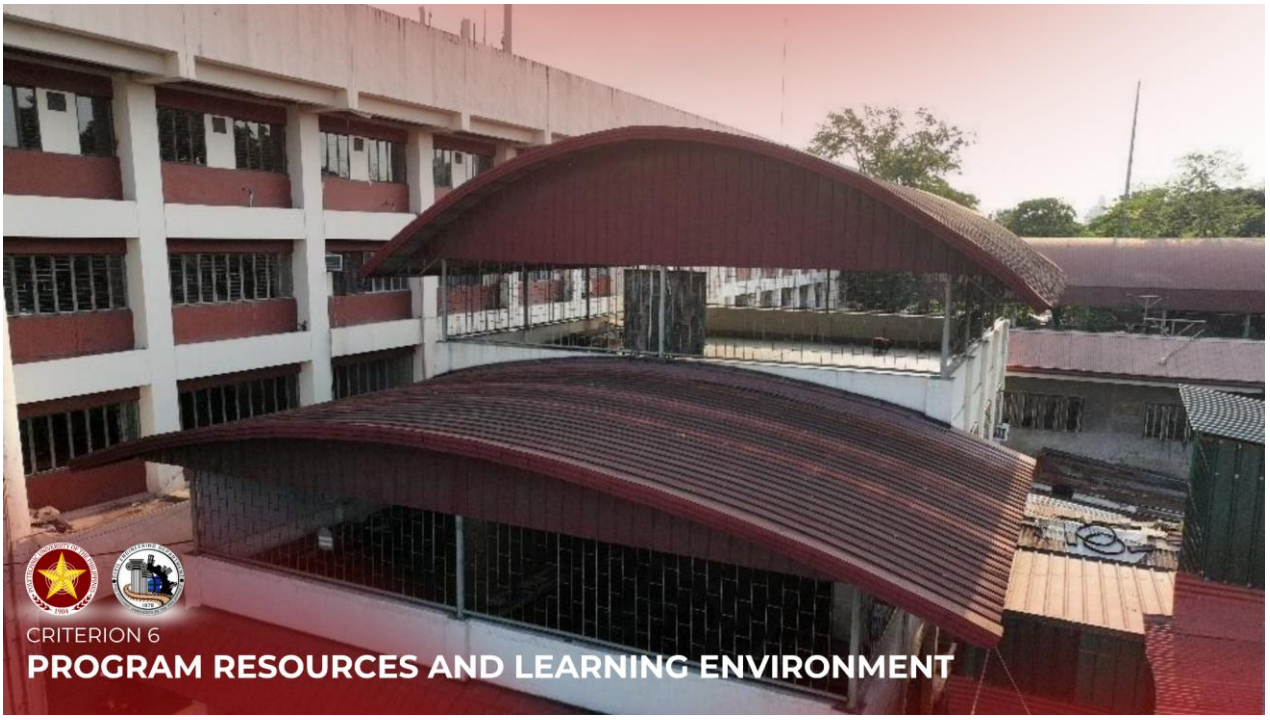


Figure 6.59 *Gabriela Silang Building located at the rear and adjacent to the College of Engineering and Architecture (CEA) Building at the Polytechnic University of the Philippines (PUP), housing the CEA Study Area and Multipurpose Hall for student use and academic activities.*

Additional student centers are in the Main Academic Building, including the North Wing Student Center, East Wing Student Center, and West Wing Student Center. Each of these facilities is located on the ground floor of its respective wing, has an area of 437.88 square meters, and can accommodate 200 students. These student centers provide accessible

and flexible spaces that enhance student engagement and contribute to a well-rounded university experience.

Table 6.21 *Student Center Areas Information*

Student Center	Size (m^2)	Location	Capacity
Charlie Del Rosario	1,200.00	Ground Floor – Charlie Del Rosario Building	500
Gabriela Silang Study Area (CEA)	121.80	NDC Campus Ground Floor – Gabriela Silang Building	100
Gabriela Silang Multipurpose Hall (CEA)	91.35	NDC Campus 2nd Floor – Gabriela Silang Building	75
North Wing Student Center*	437.88	Ground Floor North Wing, Main Academic Building	200
East Wing Student Center	437.88	Ground Floor East Wing, Main Academic Building	200
West Wing Student Center	437.88	Ground Floor West Wing, Main Academic Building	200

* Note: Under Construction

A.5.d. Cafeteria/Food Services

The Polytechnic University of the Philippines provides a variety of food service facilities to meet the dining and refreshment needs of students, faculty, staff, and visitors. These food service areas include both university-managed and privately operated concession spaces, ensuring the availability of accessible and convenient food options within the campus. Aside from serving daily meals and snacks, these facilities also support university activities by providing food services for events, meetings, and similar functions.

Food services within the University are supplemented by private concessionaires located at the PUP Lagoon, providing students, faculty members, staff, and visitors with accessible dining and refreshment options. The Lagoon Concessionaire Area covers approximately

338.00 square meters and can accommodate up to 280 users, while the commercial spaces within the PUP Lagoon occupy a total area of 494.52 square meters with a seating capacity of 200. Collectively, these facilities support the daily needs of the academic community by providing convenient spaces for meals, short breaks, and informal interaction, thereby contributing to a more comfortable and supportive campus learning environment.

The Full Cup Café, located within the Ninoy Aquino Library and Learning Resources Center (NALLRC), contributes to a supportive and student-centered learning environment by providing an accessible space where students and faculty members may take short breaks, hold informal academic discussions, and obtain refreshments while using the University's library and learning facilities. Its proximity to study areas and resource centers supports sustained academic engagement by allowing users to remain within the learning complex while attending to their basic needs. As part of the broader campus environment, the café complements the formal instructional and library spaces by promoting comfort, interaction, and a more conducive experience for collaborative and independent learning.

Figure 6.60 *Photo Documentation of Full Cup Café, an in-house coffee shop at the NALLRC Building at the PUP Main Campus where students and guests are provided a space for social interaction of the university community.*

Additionally, Café Hasmin provides accessible food and refreshment services to students, faculty members, staff, and University guests at the M.H. Del Pilar Campus. It also serves as a convenient space for meals, short breaks, and informal interaction, contributing to a

comfortable and supportive campus learning environment. These food service facilities contribute not only to the convenience and welfare of the university community but also to the institution's income-generating initiatives, particularly through the rental of concession spaces to private food stall operators.

Figure 6.61 *Café Hasmin at the Polytechnic University of the Philippines (PUP), providing a dining and social space that supports student interaction and campus life.*

Figure 6.62 *PUP Lagoon at the Main Campus of the Polytechnic University of the Philippines, renovated in 2021 and developed with food and non-food concessionaire spaces to support campus activity and student engagement.*

Figure 6.63 *PUP Lagoon at the Polytechnic University of the Philippines (PUP) during nighttime, showcasing illuminated landscape features that enhance the campus environment for leisure and social interaction.*

Table 6.22 *Food Services Information*

Cafeteria	Size (m^2)	Location	Capacity
Lagoon Concessionaire	338.00	PUP Lagoon	280
Commercial Spaces	494.52	PUP Lagoon	200

A.5.e. SPORTS AND WELLNESS FACILITIES

The University offers indoor and outdoor sports facilities that can accommodate students, staff and guests that engage in physical activities. These amenities also serve as the training ground for the student athletes that participate in the intercollegiate sports program of different state universities.

Physical Education Building

The Physical Education (PE) Building of the Polytechnic University of the Philippines is a two-storey academic facility located at the Mabini Campus, strategically positioned between the Tahanan ng Alumni and the Ninoy Aquino Library and Learning Resource Center (NALLRC). It primarily serves as the dedicated venue for physical education instruction, housing classrooms that support the university's general education and wellness programs. Designed to facilitate movement-based learning and support student

health and fitness, the building plays a complementary role in the holistic development of PUP students.

With a total floor area of 1,320.00 square meters, the PE Building includes 1 office room for administrative and faculty use, 1 classroom for lectures and theoretical instruction in physical education, and 8 restrooms, ensuring comfort and accessibility for its daily users. It also features 8 laboratory-type spaces, which may include activity areas or rooms designed for physical fitness assessments, movement instruction, and practical classes. Additionally, 1 function room is available to host related activities such as student assemblies, fitness workshops, or small-scale physical education events.

The PE Building is not only a physical space but also a critical resource in promoting student well-being, discipline, and teamwork—attributes that contribute to the development of responsible and well-rounded graduates. Through this facility, PUP upholds its commitment to providing balanced academic and co-curricular resources that support its students' physical, mental, and social growth.

Table 6.23 *PE Building information*

Total area (m^2)	Total No. of Function Room	Total No. of Restroom	Total No. of Persons Accommodated
1,320.00	0	2	540

Figure 6.64 *Physical Education (PE) Building at the Polytechnic University of the Philippines (PUP), supporting instructional and athletic activities.*

Figure 6.65 *Exercise and Sports Science Laboratory that can be found at the Physical Education (PE) Building at the Polytechnic University of the Philippines (PUP), hat students and instructors may use for recreational and instructional purposes.*

Multipurpose Building and Sports Facility (PUP Gymnatorium)

The Multi-Purpose Building and Sports Facility at the Polytechnic University of the Philippines marks a significant upgrade to the University's infrastructure for physical education and student development. This two-storey structure is being built on the same site previously occupied by the now-demolished Multi-Purpose Building and Sports Development Facility, located behind the Engineering Science and Research Center at the

Mabini Campus. Designed to enhance the athletic and wellness programs of the University, the new facility will offer modern and spacious areas for both sports and administrative functions.

The ground floor is planned to house courts for various indoor sports activities, creating a dedicated space for physical education classes, training, and recreational use. Meanwhile, the second floor will feature offices for athletic and administrative personnel, along with a running track, allowing for continued student fitness engagement in a safe and controlled environment.

The facility will have a total area of 4,423.76 square meters, reflecting a substantial expansion in floor space compared to the previous structure. It is designed to accommodate approximately 1,700 individuals, making it suitable for large-scale university events, tournaments, and other institutional gatherings. The building will include four function rooms to host meetings, training sessions, or orientation programs, and will be equipped with ten restrooms, ensuring user convenience and adequate support for high-volume use. While no specific additional equipment is listed at this stage, the space is expected to be outfitted with the necessary amenities to support a wide range of sports and wellness activities.

This new facility embodies PUP's commitment to promoting a balanced academic experience, one that not only emphasizes intellectual growth but also supports the physical well-being and holistic development of its students.

Table 6.24 *Multi-Purpose Building and Sports Development Facility information*

Total area (m^2)	Total No. of Function Room	Total No. of Restroom	Total No. of Persons Accommodated
4,423.76	4	10	Approx. 1700

Figure 6.66 *The PUP Gymnasium and Indoor Sports Court. A modern facility designed to support physical education, sports development, and university events in a safe and conducive environment.*

Oval with Grandstand

The Oval with Grandstand is one of the key outdoor facilities at the Polytechnic University of the Philippines, located on the left side of the Mabini Campus upon entering the main university premises. Serving as the central venue for outdoor physical education and athletic activities, the grandstand supports both academic instruction and co-curricular engagement in sports and fitness.

The structure features ground-level spaces that include offices and male and female quarters for University athletes, which serve as holding areas and rest zones for students during training sessions, competitions, and university events. The second floor is equipped with concrete benches, offering seating for spectators during athletic meets, ceremonies, and campus-wide functions.

Physically, the grandstand spans a total area of 545.00 square meters and can accommodate approximately 360 persons, making it suitable for mid-scale events and instructional demonstrations. The facility is supported by four restrooms, which help ensure the comfort and convenience of its users. While the grandstand is not equipped with function rooms or additional equipment, it serves a critical function in supporting the delivery of physical education classes, fitness assessments, athletics instruction, and student-athlete training.

Table 6.25 *Oval and Grandstand Information*

Total area (m^2)	Total No. of Function Room	Total No. of Restroom	Total No. of Persons Accommodated
545.00	0	4	360

Figure 6.67 *The PUP Oval with Grandstand. An open recreational and training space that supports physical activities, student engagement, and campus events within the university environment*.

In terms of its contribution to instruction, the Oval and Grandstand provide an open and structured environment for the practical application of movement science and sports education. It enables faculty to deliver experiential learning that emphasizes teamwork, discipline, physical endurance, and motor skill development. By providing a dedicated and purpose-built outdoor space, the facility enhances the University's capacity to deliver a well-rounded education that supports both intellectual and physical growth.

Swimming Pool with Grandstand

The Swimming Pool with Grandstand at the Polytechnic University of the Philippines is an essential athletic facility situated within the Mabini Campus, adjacent to the Multi-Purpose Building and Sports Development Facility. Designed to support both academic instruction and athletic development, the swimming pool serves as a primary venue for physical education classes, particularly for swimming and water safety modules. It also functions

as a training ground for the University's varsity swimmers and is occasionally utilized by external guests and partner institutions for their own athletic training programs.

Table 6.26 *Swimming Pool with Grandstand Information*

Total area (m^2)	Total No. of Function Room	Total No. of Restroom	Total No. of Persons Accommodated
1,716.00	0	2	560

Figure 6.68 *Olympic-Size Swimming Pool | PUP Main Campus, Sta. Mesa. A dedicated facility supporting aquatic training, physical education, and sports development within the university.*

With a total area of 1,716.00 square meters, the facility features a spacious open-air pool environment that accommodates a maximum of 560 persons, making it suitable for classes, training sessions, and small-scale competitions. Although there are no enclosed function rooms within the structure, it includes two restrooms to support user convenience. The facility's open space layout promotes flexibility in hosting a variety of aquatic activities and offers grandstand seating for spectators and participants during events or instructional demonstrations.

From an instructional perspective, the swimming pool significantly enhances the delivery of the University's physical education curriculum. It allows students to engage in skill-based learning through direct experience in aquatic fitness, swimming techniques, and water

safety practices—skills essential for both recreational and survival purposes. The facility also fosters discipline, endurance, and self-confidence among student-athletes and non-athletes alike. As such, the Swimming Pool with Grandstand plays a vital role in promoting physical wellness, experiential learning, and holistic student development at PUP.

Outdoor Sports Court

Figure 6.69 *Tennis court at the Polytechnic University of the Philippines (PUP), providing facilities for athletic training and recreational activities.*

The Polytechnic University of the Philippines provides an Outdoor Sports Court/Tennis Court as part of its commitment to promoting physical well-being, recreation, and holistic student development. Strategically located within the campus, the facility offers a dedicated space for tennis and other outdoor physical activities, serving both instructional and extracurricular purposes. Its open-air design allows for a conducive environment that supports active engagement, fitness training, and recreational use among students, faculty, and staff.

The court is maintained with appropriate surface markings and equipment to support standard tennis play, ensuring functionality and usability for both beginners and experienced players. It is also utilized for physical education classes, sports training, and organized activities that enhance students' physical fitness, coordination, and discipline. The availability of such facilities contributes to the development of teamwork,

sportsmanship, and overall wellness, which are essential components of a balanced educational experience.

In addition to its instructional use, the outdoor sports court serves as a venue for recreational activities and informal gatherings that foster social interaction and community engagement within the University. Its accessibility encourages participation in physical activities, supporting the institution's advocacy for a healthy and active lifestyle among its stakeholders.

Overall, the Outdoor Sports Court/Tennis Court complements the University's academic facilities by providing a space that nurtures physical development alongside intellectual growth. It reflects PUP's commitment to delivering a well-rounded educational environment that integrates academic excellence with health, wellness, and student engagement.

A.5.f. The Medical and Dental Services

The Polytechnic University of the Philippines provides essential healthcare and wellness services through clinic and support facilities strategically located within its campuses to address the medical, dental, psychological, and guidance needs of students, faculty members, staff, and other university constituents. These facilities are intended to make basic healthcare services accessible and responsive to the needs of the PUP community, while also supporting the University's commitment to promoting physical, mental, and emotional well-being.

The Medical Services Department (MSD), which is composed of the Medical and Dental Sections, serves as the primary healthcare unit of the University. It is manned by physicians, dentists, nurses, dental aides, attendants, psychologists, and guidance counselors who work together to provide efficient and effective primary and emergency healthcare services. Through its programs and services, the department supports promotive, preventive, and curative healthcare for students, faculty, support staff, and their dependents. These initiatives also contribute to the holistic development of students, beginning with pre-enrollment medical assessment and extending to mental health support and other wellness-related interventions throughout their academic journey at PUP.

Based on the available clinic facilities, the University maintains several service areas in the A. Mabini Campus and NDC Campus CEA. At the A. Mabini Campus, the Medical Clinic has a total area of 238.00 square meters and a capacity of 50 persons, with doctors,

nurses, and attendants assigned to the facility. The Dental Clinic has a total area of 78.24 square meters and can accommodate 15 persons, with a dentist and attendants providing services. The Psychological Center occupies 60.30 square meters and has a capacity of 12 persons, staffed by psychologists. The Guidance Examination/Testing Room, also located at the A. Mabini Campus, has a total area of 42.00 square meters and accommodates 8 persons, under the supervision of a guidance counselor. In addition, the Medical Clinic at NDC Campus CEA has a total area of 60.90 square meters, a capacity of 12 persons, and is staffed by doctors, nurses, and attendants.

Figure 6.70 *Medical clinic facility at the College of Engineering and Architecture (CEA) Building, Polytechnic University of the Philippines (PUP), equipped with patient beds and essential healthcare provisions for basic medical services.*

Altogether, these facilities have a combined total area of 479.44 square meters and a total service capacity of 97 persons. This network of health and wellness facilities reflects the University's vision of fostering a productive and well-supported academic community, where the value of optimum well-being, responsible behavior, and accessible healthcare is recognized and upheld.

Table 6.27 *Clinic Information*

Name of Clinic	Total Area (m^2)	Location	Capacity	Human Resources Assigned
Medical Clinic	238.00	A. Mabini Campus	50	Doctors, Nurses, Attendants
Dental Clinic	78.24	A. Mabini Campus	15	Dentist, Attendants
Psychological Center	60.30	A. Mabini Campus	12	Psychologists
Guidance Examination / Testing Room	42.00	A. Mabini Campus	8	Guidance Councilor
Medical Clinic	60.90	NDC Campus CEA	12	Doctors, Nurses, Attendants

Figure 6.71 *Dental Services facility at the Polytechnic University of the Philippines (PUP), equipped with modern dental units to support preventive and clinical oral healthcare services for the university community.*

A.5.g. The Office of Counseling and Psychological Services

The Guidance and Counseling Office is composed of professional workers who apply modern techniques of education for the direct benefit of the students, faculty and administration in meeting their needs to maximize their development. The Office, however, does not limit its duties to this activity but is, likewise engaged in basic research designed to increase its own effectiveness in rendering services and carry out its objectives. The Guidance and Counseling Office has its main office located at the 2nd Floor of the Charlie Del Rosario Building and maintains an annex office at the 4th Floor of the College of Engineering and Architecture Building at the NDC Campus. These offices serve as accessible venues where students may seek counseling, consultation, psychological assistance, and other related support services.

Through the Guidance and Counseling Office, the University offers a broad spectrum of counseling and psychological services designed to assist students in mobilizing their creative energies and achieving more effective personal, social, emotional, spiritual, educational, and vocational development. The Office specifically aims to:

- Help the students achieve the maximum level of their potentials thereby; enabling them to contribute their share to society;
- Assist the students in meeting and solving their own problems as they make correct interpretation of facts that lead to wise choices and needed adjustments;
- Enable the students to enjoy a well-balanced life in all its aspects - physical, mental, emotional and social.

The Guidance and Counseling Office is committed to:

- Implement effective and viable guidance programs for the University;
- Maintain a close and harmonious coordination with all its units, faculty, and administration for the total development of their constituents;
- Pursue a continuing personal and professional development of its counselors and staff; and
- Establish linkages with other guidance institutions, non-government organizations and other universities with similar vision and mission.

The following are the services of the Office of Counseling and Psychological Services:

Counseling Service

This is the heart of Guidance. It aims to assist the student to make a realistic appraisal of his interest, abilities and aptitudes as gathered from preliminary interviews and to arrive at an educational adjustment or solution to his problems. Effective counseling makes a student adjust better in his school, home and community; thus they develop the maturity to view life objectively and gain a better insight into their own conduct so that they may solve their problem.

Information Service

Orientation and information are given to help the students get acquainted with their new school environment, the school staff, the demands of college life, and the nature and requirements of the course. Through the dissemination of pertinent information, particularly cumulative sheets as bases for counseling, assessment and research, they may broaden their learning experiences.

Individual Inventory Service

Collecting, recording and utilizing information about the students are done through the accomplishment of the Personal Data Sheet (PDS) or the Cumulative Record, results of psychological tests and previous interviews. The data gathered can be used as basis for counseling.

Peer-Facilitators

This program is designed to reach out to as many students as possible. With the sound principle that students relate best with their peers, the Guidance Office utilizes students in the task of redirecting others. A number of qualified students are trained to become peer facilitators. They assist the guidance personnel in implementing the different guidance programs. The peer facilitators help facilitate growth groups or group guidance sessions.

Research and Evaluation Service

This part of the program helps the unit in identifying the services or activities that require attention to be strengthened or to be offered. Likewise, it facilitates evaluation of the unit progress and services.

Testing Service

Psychological tests are given to students or classes needing them. Tests help to measure a sample of students' interest, mental ability, aptitudes, academic achievement,

personality and adjustment. Tests results are interpreted to students for purposes of greater self-awareness, self-understanding and career planning.

Follow-Up Service

The progress of the underachievers and students with failing grades are followed up in terms of their low academic performance and poor study skills. Achievers or scholars are also followed up in terms of their academic progress and personal adjustment. This service hopes to help underachievers cope with strong pressures, temporary disappointments or frustrations. Serious cases of mental and physical problems are referred to the family.

Other Services

Seminars, workshops, lectures, training programs that will help students, faculty members and administrative officials are programmed. These services are designed for students with or without problem so that they can gain greater understanding of themselves and the world around them. Such will result in greater self-improvement and self-realization.

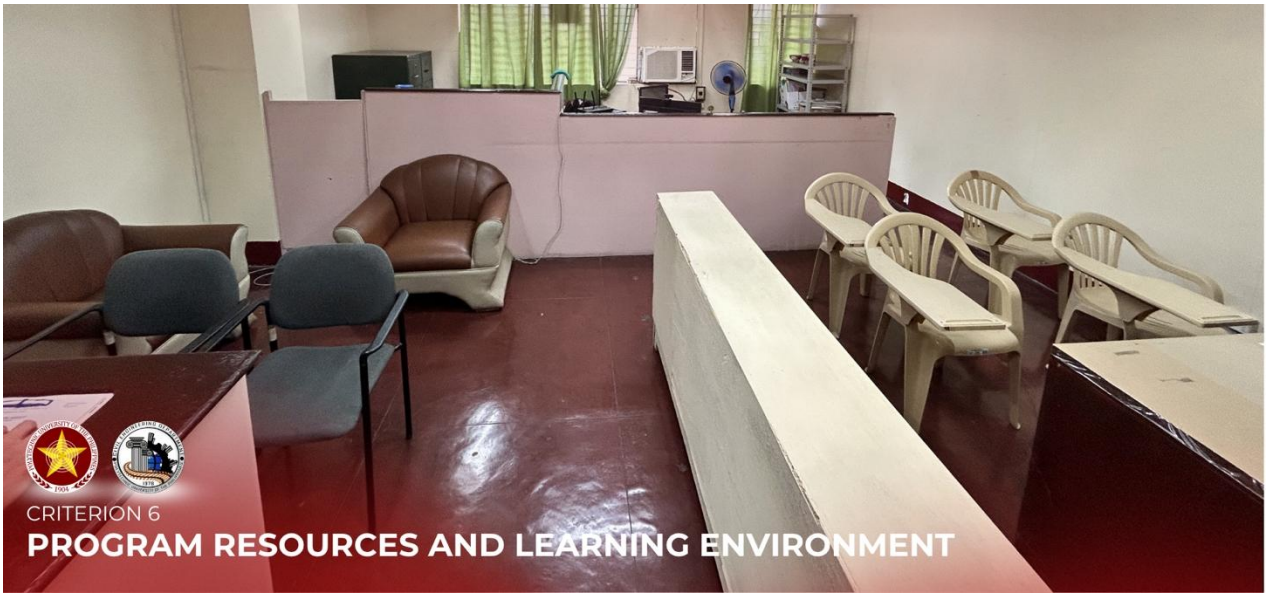


Figure 6.72 *The Guidance and Counseling Office*

A.5.h. Function Rooms

The University provides a wide range of multi-functional amenities that may be used by various groups and clients for academic, institutional, and social activities such as conferences, seminars, workshops, assemblies, religious gatherings, parties, and similar events. These function rooms and venues serve as important spaces for learning, collaboration, and community engagement, reflecting the University's capacity to host both small-scale meetings and large-scale programs.

Based on the available facilities, the University has a total of 19 function rooms with a combined area of 6,473.58 square meters and an overall accommodation capacity of 5,534 persons. Among the major venues are the PUP Gymnasium, which has the largest capacity at 1,150 persons; Bulwagang Balagtas, which can accommodate 834 persons; the Manila Room, with a capacity of 750; and the UCCA Theater, which can hold 700 persons. Other important facilities include Bulwagang Bonifacio, Claro M. Recto Hall, the Board Room, several AVRs, the North Wing 3rd Floor Multimedia Room, and other function spaces such as the Davao Room, Zamboanga Room, and BPO Plenary Hall. In addition, selected venues such as Claro M. Recto Hall and the PUP Gymnasium are equipped with restrooms, further supporting convenience and functionality for users.

Overall, these facilities demonstrate the University's ability to accommodate diverse activities and events, providing flexible and well-distributed spaces that support both institutional operations and stakeholder engagement.

Table 6.28 *Function Rooms Information*

Function Room	Total Area (m^2)	Total No. of Function Room	Total No. of Restroom	Total No. of Persons Accommodated
Bulwagang Balagtas	542.25	1	0	834
Bulwagang Bonifacio	237.75	1	0	365
Board Room	102.60	1	0	154
Claro M. Recto Hall	384.96	1	2	592
Punong Bayan AVR	74.58	1	0	114
Accenture AVR	74.58	1	0	114
Nemesio Prudente AVR	92.81	1	0	70
South Wing 4th Floor AVR	94.5	1	0	70
UCCA Theater	1,456.00	1	0	700
CEA AVR	115.00	1	0	100
Manila Room	463.43	1	0	750
Davao Room	56.62	1	0	60

Zamboanga Room	56.90	1	0	60
iTech AVR	124.00	1	0	85
PUP Gymnasium	2,300.00	1	4	1150
BPO Plenary Hall	144.00	1	0	80

The Conference Rooms at the Polytechnic University of the Philippines Main Campus serves as an essential institutional space for academic coordination and administrative functions. Designed to accommodate formal meetings and collaborative discussions, it is equipped with standard furnishings and presentation facilities that support clear communication and organized proceedings among faculty members and administrators.

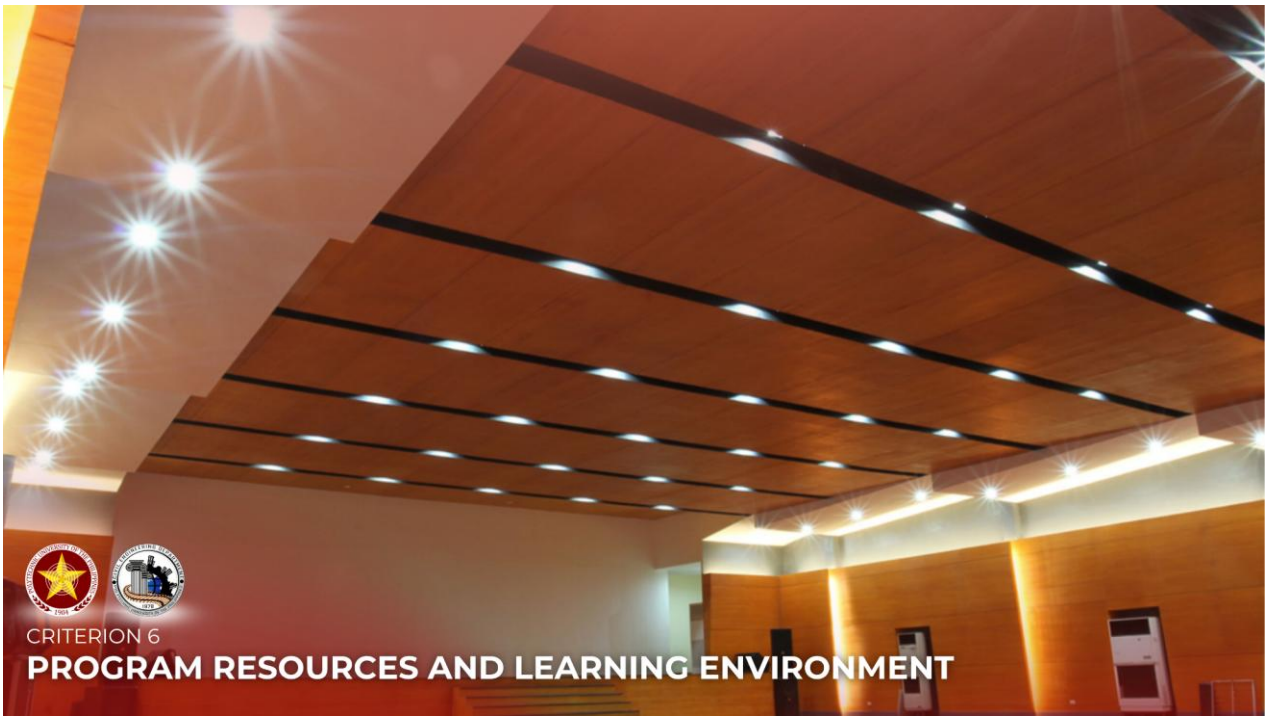


Figure 6.73 *Bulwagang Balagtas | PUP Main Campus, Sta. Mesa, Manila. A multifunctional hall designed to accommodate academic events, seminars, and institutional gatherings in a modern and well-equipped setting.*

Figure 6.74 *Gymnasium at the Polytechnic University of the Philippines (PUP), serving as a primary venue for university assemblies, events, and large-scale gatherings*.

Figure 6.75 *Mateo Conference Room at the Polytechnic University of the Philippines (PUP), designed to accommodate formal meetings, presentations, and collaborative discussions within an academic setting.*

In the context of university operations, the Conference Rooms including **Mateo Conference Room** and **Dr. Olonan Conference Room** and **Dr. Caragué Conference Room** are primarily utilized for executive meetings, program planning, faculty meetings, seminars, and internal consultations.

Mateo Conference Room is an executive conference room with internet connection that can handle small group face-to-face and online meetings while Dr. Olonan Conference Room and Dr. Carague Conference Rooms can handle small group face-to-face and online meetings.

These institutional support facilities provide a structured environment that facilitates decision-making processes, policy discussions, and the exchange of academic insights. This function highlights its role as a support facility that contributes to the effective management and continuous development of academic programs.

Furthermore, the conference rooms reinforce a professional setting within the campus, reflecting institutional standards of organization and collaboration. As shared resources, these facilities enhance the university's ability to conduct formal engagements efficiently, supporting its broader mission of academic excellence and institutional advancement.

Figure 6.76 *Dr. Olonan Conference Room at the Polytechnic University of the Philippines (PUP), configured for small-group meetings, discussions, and administrative functions.*

A.5.i. Audio-Visual Room

The Civil Engineering Department and the College of Engineering and Architecture provide audio-visual facilities that support a wide range of academic, administrative, and professional activities. These rooms serve as dedicated venues for multimedia-assisted instruction, conferences, meetings, presentations, and student performances, thereby

enhancing communication, collaboration, and the overall learning experience of the university community.

One of these facilities is the CE Audio-Visual Room, which has a total area of 63 square meters and is located at CEA 109B. Its size is adequate for accommodating small to medium-sized groups while providing sufficient space for seating, presentation equipment, and movement within the room. Its location within the CEA building makes it readily accessible to Civil Engineering students, faculty members, and staff, allowing it to effectively support departmental activities and functions.

In addition, the CEA AVR, located within the CEA building, also serves as an important venue for conferences, meetings, presentations, and performances involving students, faculty, non-teaching personnel, and university officials. These audio-visual rooms are not limited to classroom-related activities alone; they also function as venues for administrative meetings, academic programs, formal presentations, and other institutional events. As such, they significantly contribute to the delivery of quality instruction and the conduct of professional and co-curricular activities within the college.

Figure 6.77 *The Civil Engineering Audio Visual Room (CE AVR) located at CEA 109A is a fully air-conditioned facility equipped with interactive projectors, an interactive TV, podium, and elevated seating, designed to support lectures, presentations, seminars, and academic activities of the Civil Engineering Department.*

Table 6.29 *Audio-Visual Room Information*

Name	Area (m^2)	Location	Functions
CE Audio-Visual Room	63	CEA 109B	Conferences, meetings, presentations and performances of students, faculty, non-teaching personnel and university officials
CEA AVR	108	CEA	Conferences, meetings, presentations and performances of students, faculty, non-teaching personnel and university officials

A.5.j. Accommodation

The University also provides accommodation facilities. These facilities are designed to offer convenient and functional lodging. Based on the available accommodations, the University has two primary lodging facilities: the Hasmin Hostel and the Presidential Suites. The Hasmin Hostel has a total area of 600 square meters, contains 3 rooms, 25 restrooms, and can accommodate up to 292 persons. Meanwhile, the Presidential Suites occupy 154.00 square meters, also with 3 rooms and 4 restrooms, and can accommodate 27 persons. Through these facilities, the University extends hospitality and provide suitable accommodations within the campus.

Figure 6.78 *Interior view of a dormitory room at* ***Hasmin Hostel****, featuring multiple bed accommodations arranged to support shared residential living.*

Table 6.30 *Accommodations Information*

Name of Room	Total Area (m^2)	Total No. of Function Room	Total No. of Restroom	Total No. of Persons Accommodated
Hasmin Hostel	600	3	25	292
Presidential Suites	154.00	3	4	27

Athletes Accommodation

The University provides dedicated accommodation facilities for its athletes, with separate buildings intended for male and female occupants. These facilities are designed to ensure that student-athletes have safe, accessible, and functional living spaces that support their training, welfare, and overall development. Based on the attached inventory, one of these facilities is the Tahanan ng Atleta, which has a total area of 460.71 square meters, includes 4 restrooms, and can accommodate up to 70 persons. The facility does not contain a function room, as its primary purpose is residential accommodation for athletes. Through these provisions, the University demonstrates its commitment to supporting the needs and well-being of its athletic community.

Table 6.31 *Athletes Accommodations Information*

Name of Room	Total Area (m^2)	Total No. of Function Room	Total No. of Restroom	Total No. of Persons Accommodated
Tahanan ng Atleta	460.71	0	4	70

Figure 6.79 *Tahanan ng Atleta at the Polytechnic University of the Philippines (PUP), inaugurated on April 29, 2017 at the Sta. Mesa Campus, serving as a dedicated residential facility for student-athletes.*

A.5.k. Support Institutional Buildings

There are buildings that serve as support for the University's needs such as the Property and Supply Management Office Building for the office supplies, equipment, and the like. The printing press which helps the university to print their posters, newspapers, journals, and the like. The Charlie Building houses the guidance office and school student organization offices that support the student and staff. The Sampaguita building houses the university canteen which prepares food for the staff, students, and guests.

Property and Supply Management Office Building

The Property and Supply Management Office (PSMO) is located at the Mabini Campus, adjacent to the University Linear Park and beside the Printing Press Office. Housed in a two-storey building, the office serves as the central facility for the management, storage, and distribution of office supplies, equipment, and other materials needed by the University. It plays an essential role in ensuring that the various units and offices of the institution are provided with the resources necessary for their daily operations and functions.

Based on Table 6-16, the Property and Supply Management Office building has a total area of 583.23 square meters. The building has two restrooms to support the needs of its personnel and clients. As a support service facility, the office is vital to the efficient

management of university property, supplies, and equipment, thereby contributing to the smooth and effective delivery of institutional services.

Figure 6.80 *Property and Supply Management Office at the Polytechnic University of the Philippines (PUP), responsible for inventory control and asset management.*

FAMO Office Building

The Facility Management Office (FAMO) of the Polytechnic University of the Philippines (PUP) is responsible for the management, maintenance, and supervision of the university's physical facilities and support services. It plays a vital role in ensuring that the campus environment remains safe, functional, orderly, and conducive to learning and work. Through its responsibilities, the office helps sustain the efficient operation of university buildings, grounds, utilities, and other institutional facilities.

FAMO oversees various services related to the upkeep and improvement of university infrastructure. These include the maintenance of buildings and classrooms, monitoring of repairs, coordination of facility-related concerns, and support for the proper use and preservation of university properties. By carrying out these functions, the office contributes significantly to the overall efficiency of university operations and to the comfort, safety, and welfare of students, faculty, staff, and visitors.

Figure 6.81 *Newly constructed* ***Facilities Management Office (FAMO) Building*** *at the Polytechnic University of the Philippines (PUP), nearing completion and full operational readiness.*

Sampaguita Building (Communications Office and Records Office)

At the heart of the Polytechnic University of the Philippines stands the Sampaguita Building, a place that quietly carries an important part of university life. More than just a structure within the campus, it serves as a center of connection, memory, and institutional identity. Within its walls are offices that help preserve the voice and history of the university, making the building a significant space for both communication and records management.

The Sampaguita Building is home to the Communications Management Office (CMO), the unit tasked with shaping and sharing the university's message. In many ways, the CMO gives life to the ideals of PUP by communicating its vision, goals, and priorities to students, faculty, staff, alumni, partners, and the broader public. It serves as the bridge between the university leadership and its stakeholders, ensuring that information flows clearly and meaningfully. Through its work, the office not only informs but also fosters understanding, trust, and engagement within the university community.

Figure 6.82 *Sampaguita Building at the Polytechnic University of the Philippines (PUP)*

Inside the CMO, communication is treated as both responsibility and service. The office builds and protects the image and brand of PUP, making sure that every announcement, publication, and public statement reflects the institution's values and aspirations. It manages communication policies, handles media relations, and produces creative works that highlight the achievements, programs, and events of the university. In today's digital age, the CMO also actively uses social media and other platforms to bring PUP closer to the public, celebrating its milestones and keeping the community updated on matters that shape campus life.

Equally important, the Sampaguita Building also houses the Records Section, the keeper of vital documents and institutional memory. While the CMO carries the voice of the university outward, the Records Section safeguards the information that anchors its operations and history. It ensures that official documents are properly organized, preserved, and made accessible when needed. In this way, the building becomes a place where both the present and the past of the university are carefully managed.

Together, these offices give the Sampaguita Building a special role in PUP. It is a place where stories are told, identities are strengthened, and records are protected. It stands not only as a physical office space, but as a symbol of how the university values clear communication, public service, and responsible stewardship of information. Through the

work carried out within it, the Sampaguita Building contributes quietly yet powerfully to the life and legacy of the Polytechnic University of the Philippines.

Printing Press Building

The Printing Press Building is a two-storey facility located at the Mabini Campus, beside the Property and Supply Management Office. It plays an important role in supporting the university's publication and communication needs by producing newspapers, journals, posters, and other printed materials essential to academic and administrative functions. Beyond printing services, the building also contributes to the visual presentation of the University through the preparation of communication and promotional materials. With a total area of 261.80 square meters, the building contains one function room, two restrooms, and can accommodate up to 60 persons. As such, the Printing Press Building serves as a vital space for the production of official publications and the enhancement of the University's public image.

Table 6.32 *Printing Press Building Information*

Total Area (m^2)	Total No. of Function Room	Total No. of Restroom	Total No. of Persons Accommodated
261.80	1	2	60

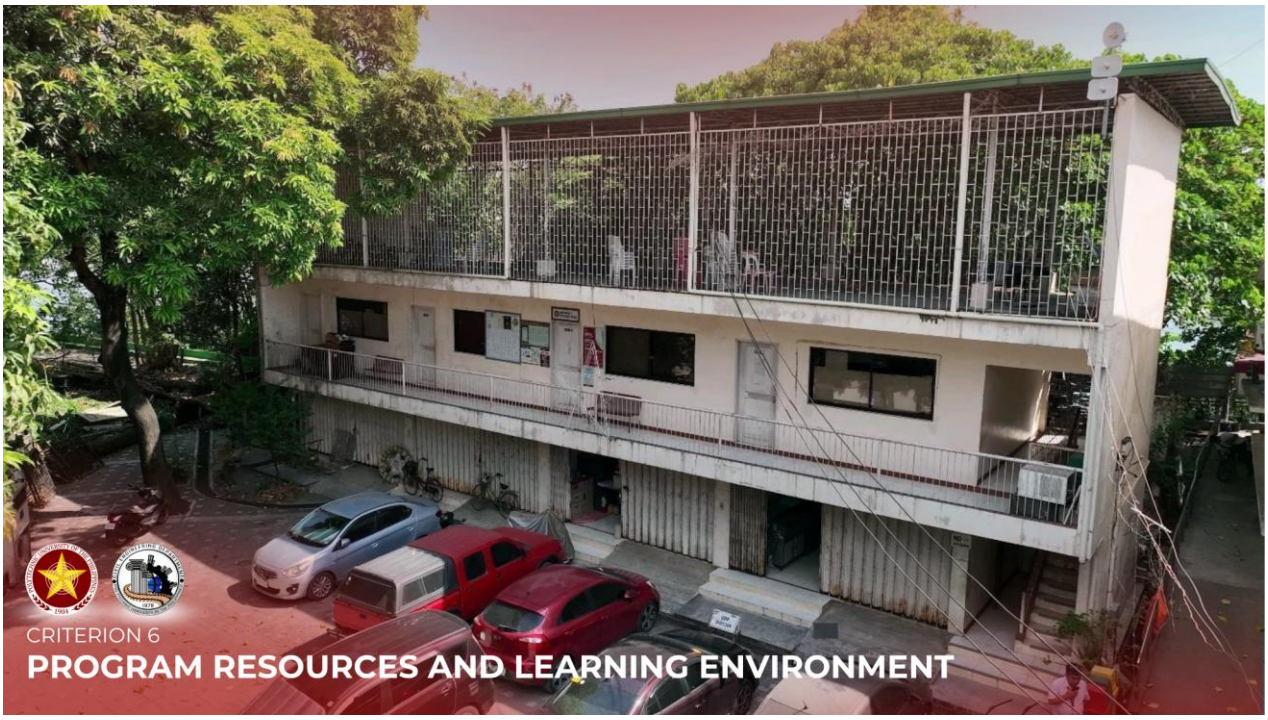


Figure 6.83 *Printing Press Building at the Polytechnic University of the Philippines (PUP), supporting institutional printing and publication services.*

A.5.I. PUP Amphitheater

The amphitheater at the Polytechnic University of the Philippines Main Campus serves as a vital academic and communal space that integrates architectural functionality with its natural surroundings. Designed with a semicircular, tiered seating arrangement, it provides optimal visibility and acoustics for a range of activities, including academic assemblies, performances, and institutional events. Its open-air configuration allows for natural lighting and ventilation, reflecting practical and climate-responsive design principles.

Beyond its structural features, the amphitheater functions as an extension of the university's learning environment. It supports both formal and informal modes of engagement, accommodating organized programs as well as everyday student interactions such as discussions, study sessions, and cultural expression. This versatility reinforces its role in fostering collaboration, creativity, and intellectual exchange within the campus.

Additionally, the presence of surrounding trees enhances the environmental quality of the space, offering shade and contributing to a conducive atmosphere for reflection and participation. As such, the amphitheater stands not only as a physical venue but also as a significant element of the university's commitment to holistic and inclusive education.

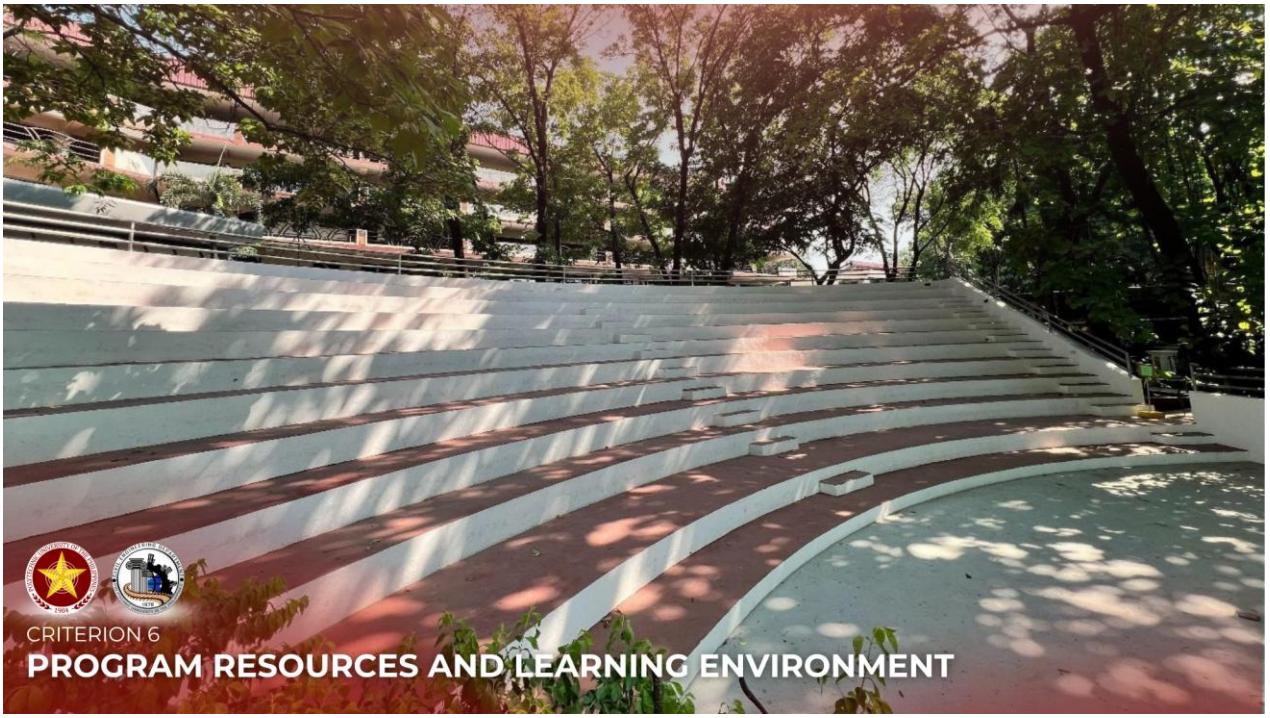


Figure 6.84 *Amphitheater at the Polytechnic University of the Philippines (PUP), featuring tiered seating integrated within a landscaped outdoor setting for academic and community gatherings.*

A.5.m. Accessibility and Inclusive Facilities

The Polytechnic University of the Philippines demonstrates its commitment to inclusive education by providing accessible and adaptive facilities that support students with special needs and differently abled individuals. The campus infrastructure is designed to ensure that all students have equitable access to academic and support services, thereby promoting participation, independence, and inclusivity within the learning environment. These initiatives reflect the University's alignment with the principles of inclusive and equitable quality education, as emphasized in global development frameworks.

Key features of the University's accessibility efforts include the provision of ramps with appropriate gradients, handrails, and designated pathways that facilitate safe and convenient mobility across buildings. Wheelchair-accessible entrances clearly marked priority access areas, and barrier-free routes are strategically integrated into campus facilities to accommodate students with mobility impairments. The inclusion of elevators in multi-storey buildings further enhances accessibility, ensuring that all students can navigate academic spaces with ease and dignity.

These accessibility initiatives are strongly aligned with the United Nations Sustainable Development Goals (SDGs), particularly SDG 4: Quality Education, which promotes inclusive and equitable education for all, and SDG 10: Reduced Inequalities, which aims to eliminate barriers faced by vulnerable populations, including persons with disabilities. By embedding inclusive design principles into its infrastructure, the University contributes to reducing disparities and fostering equal opportunities within higher education.

Figure 6.85 *Accessible ramp facilities within the Polytechnic University of the Philippines (PUP), designed to promote inclusivity and ensure safe, barrier-free mobility for all campus users.*

Overall, the provision of accessibility and inclusive facilities underscores the University's commitment to creating a safe, inclusive, and enabling educational environment. Through continuous improvement of its infrastructure and support systems, PUP not only enhances student welfare but also actively contributes to global efforts toward sustainable and inclusive development.

Figure 6.86 *Accessibility ramps at the Ninoy Aquino Library and Resource Center (NALLRC) of the Polytechnic University of the Philippines (PUP), designed to ensure barrier-free access and inclusive mobility within the facility.*

Figure 6.87 *Elevator facility at the South Wing of the PUP Main Building, providing vertical access to the 6th floor and supporting efficient circulation within the structure.*

B. Computing Resources

Describe IT and Data Privacy policies and provide wide network layout plan. Describe any computing resources (workstations, servers, storage, networks including software) in addition to those described in the laboratories in Part A, which are used by the students in the program. Include a discussion of the accessibility of university-wide computing resources available to all students via various locations such as student housing, library, student union, off campus, etc. State the hours the various computing facilities are open to students. Assess the adequacy of these facilities to support the scholarly and professional activities of the students and faculty in the program. Define the student outcomes which are highly affected by computing resources and provide data to demonstrate the intended impact on student outcomes.

B.1. Computer Room/Network

The BS Civil Engineering (BSCE) program utilizes the Computer Laboratory located at Room CEA 211, with a total floor area of 63 square meters. This facility serves as a vital learning space for the delivery of technical and analytical courses, particularly those grounded in mathematical sciences and engineering design. It provides students with a platform to engage in applied learning using advanced engineering software, thereby reinforcing theoretical knowledge with practical, industry-aligned applications.

Figure 6.89 *Civil Engineering Computer Laboratory CEA 211, a fully air-conditioned facility designed to support the instructional and technical requirements of the Civil Engineering Department. The laboratory is equipped with 50 computer workstations configured for a One student–One computer setup, an interactive TV and two 3D printers. All computer units are integrated with Wi-Fi and internet connectivity and are outfitted with webcams and headsets to facilitate hybrid learning. Installed software includes industry-standard engineering applications such as AutoCAD, MIDAS, and ArcGIS, enabling hands-on training, simulation, and digital design activities.*

Figure 6.89 *Annual MIDAS Training under the availed software subscription attended by Civil Engineering faculty and selected students was conducted by JF Nichols Cortez, Technical Support Engineer of MIDASIT Philippines, on October 20, 2025, at CEA Room 211 to strengthen competencies in advanced engineering analysis and application of industry-standard software.*

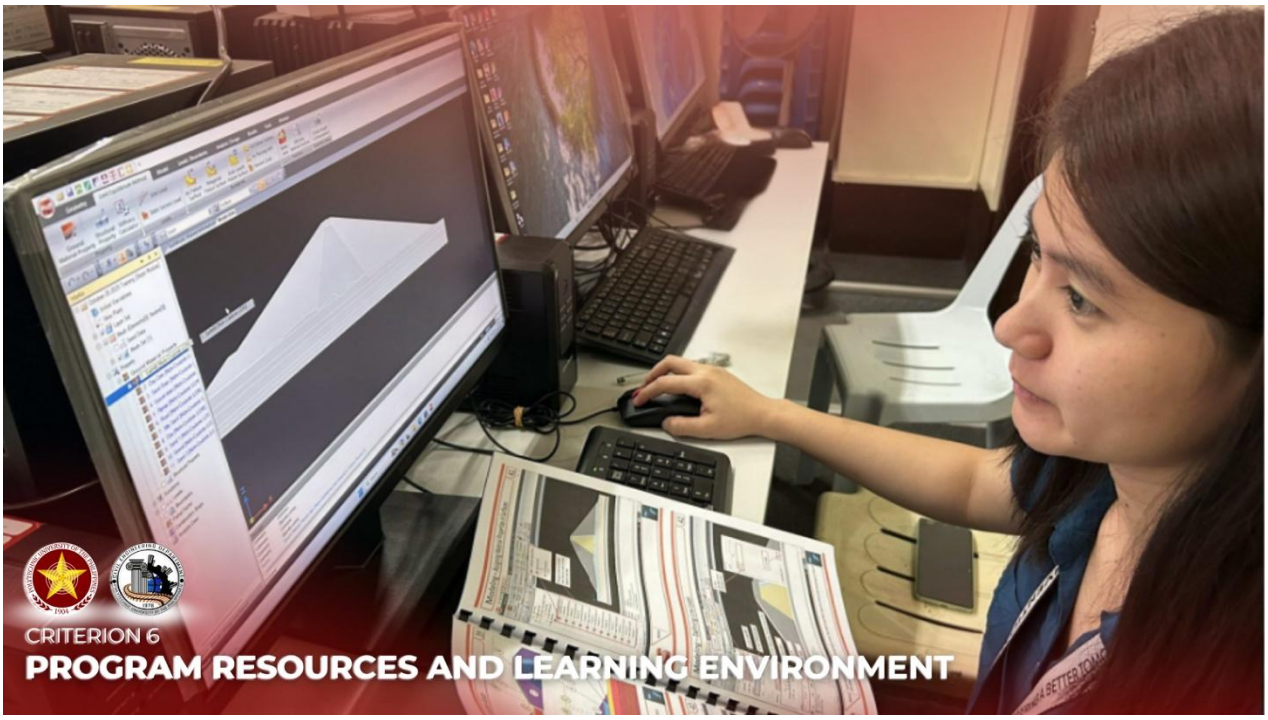


Figure 6.90 *A Civil Engineering student performs slope stability analysis using MIDAS SoilWorks, guided by a printed manual to ensure accurate modeling, interpretation, and adherence to standard engineering procedures.*

The Computer Laboratory is fully equipped with licensed software packages essential to the civil engineering domains. These include AutoCAD for drafting and design, STAAD for structural analysis, Revit Works for Building Information Modeling (BIM), MIDAS for

advanced structural and geotechnical analysis, ArcGIS for geospatial and transportation planning, and quantity surveying tools. The presence of these licensed applications ensures that students are trained using tools that mirror those used in actual engineering practice, thus enhancing their preparedness for real-world scenarios.

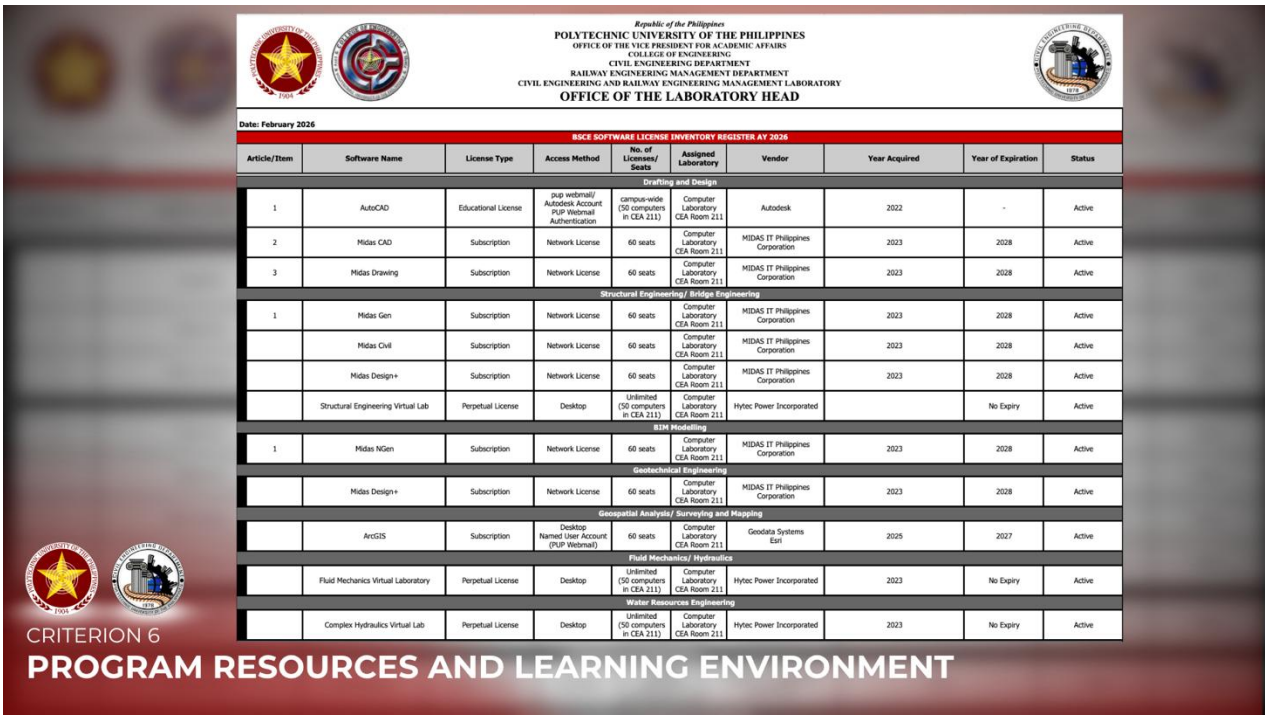
In compliance with institutional standards, the facility adheres to strict IT governance and data privacy policies aligned with the Republic Act No. 10173 or the Data Privacy Act of 2012. All computers are integrated into a secured local area network (LAN), with controlled user access managed through institutional credentials. Antivirus protocols, firewalls, and network monitoring systems are in place to prevent breaches and ensure responsible use of digital assets. Data storage and backups follow an automated protocol to protect academic and project files of students and faculty members.

The adequacy of the Computer Laboratory in supporting scholarly and professional activities is evident in its capacity to host laboratory-based courses, thesis development, and project-based learning. Faculty members utilize the lab for instruction, while students perform simulations, generate engineering plans, and conduct structural modeling tasks. The lab's environment promotes productivity and innovation, enabling students to achieve the necessary competencies in the field of civil engineering. The Computer Laboratory of the Civil Engineering Department, located at CEA Room 211, serves as a vital instructional facility that supports the teaching and learning needs of the program. The laboratory is equipped with 50 computer units, enabling it to accommodate students in the conduct of laboratory exercises, technical applications, and computer-based academic activities.

As a learning facility, the laboratory functions as a medium for instruction in mathematical and engineering-related subjects. It provides students with access to specialized software applications such as AutoCAD, MIDAS, and ArcGIS, which are essential in drafting, structural analysis, and geographic information system applications. These software applications are licensed, ensuring their authorized use for academic and instructional purposes. Through this facility, the department enhances students' technical competencies and promotes the integration of digital tools in civil engineering education (Attachment C6-19 - Software License Inventory Register).

Table 6.33 *Computer Laboratory (Room 211) Information*

Computer Laboratory Name	Area (m^2)	Location	Number of Computer Units	Functions
Computer Laboratory	63	CEA 211	50	Medium of teaching and learning process in mathematical sciences. Operate applications such as AutoCAD, MIDAS, ARC GIS, etc.



Republic of the Philippines
POLYTECHNIC UNIVERSITY OF THE PHILIPPINES
OFFICE OF THE VICE PRESIDENT FOR ACADEMIC AFFAIRS
COLLEGE OF ENGINEERING
CIVIL ENGINEERING DEPARTMENT
RAILWAY ENGINEERING MANAGEMENT DEPARTMENT
CIVIL ENGINEERING AND RAILWAY ENGINEERING MANAGEMENT LABORATORY
OFFICE OF THE LABORATORY HEAD

Date: February 2026

BSCE SOFTWARE LICENSE INVENTORY REGISTER AY 2026

Article/Item	Software Name	License Type	Access Method	No. of Licenses/ Seats	Assigned Laboratory	Vendor	Year Acquired	Year of Expiration	Status
Drafting and Design									
1	AutoCAD	Educational License	pup webmail/ Autodesk Account PUP Webmail Authentication	campus-wide (50 computers in CEA 211)	Computer Laboratory CEA Room 211	Autodesk	2022	-	Active
2	Midas CAD	Subscription	Network License	60 seats	Computer Laboratory CEA Room 211	MIDAS IT Philippines Corporation	2023	2028	Active
3	Midas Drawing	Subscription	Network License	60 seats	Computer Laboratory CEA Room 211	MIDAS IT Philippines Corporation	2023	2028	Active
Structural Engineering/ Bridge Engineering									
1	Midas Gen	Subscription	Network License	60 seats	Computer Laboratory CEA Room 211	MIDAS IT Philippines Corporation	2023	2028	Active
	Midas Civil	Subscription	Network License	60 seats	Computer Laboratory CEA Room 211	MIDAS IT Philippines Corporation	2023	2028	Active
	Midas Design+	Subscription	Network License	60 seats	Computer Laboratory CEA Room 211	MIDAS IT Philippines Corporation	2023	2028	Active
	Structural Engineering Virtual Lab	Perpetual License	Desktop	Unlimited (50 computers in CEA 211)	Computer Laboratory CEA Room 211	Hytec Power Incorporated		No Expiry	Active
BIM Modelling									
1	Midas NGen	Subscription	Network License	60 seats	Computer Laboratory CEA Room 211	MIDAS IT Philippines Corporation	2023	2028	Active
Geotechnical Engineering									
	Midas Design+	Subscription	Network License	60 seats	Computer Laboratory CEA Room 211	MIDAS IT Philippines Corporation	2023	2028	Active
Geospatial Analysis/ Surveying and Mapping									
	ArcGIS	Subscription	Desktop Named User Account (PUP Webmail)	60 seats	Computer Laboratory CEA Room 211	Geodata Systems Esri	2025	2027	Active
Fluid Mechanics/ Hydraulics									
	Fluid Mechanics Virtual Laboratory	Perpetual License	Desktop	Unlimited (50 computers in CEA 211)	Computer Laboratory CEA Room 211	Hytec Power Incorporated	2023	No Expiry	Active
Water Resources Engineering									
	Complex Hydraulics Virtual Lab	Perpetual License	Desktop	Unlimited (50 computers in CEA 211)	Computer Laboratory CEA Room 211	Hytec Power Incorporated	2023	No Expiry	Active

Figure 6.91 *A portion of the Civil Engineering Department's software inventory in Civil Engineering CEA Room 211, documenting installed applications, system status, and maintenance requirements to ensure functionality, compliance, and readiness for academic use.*

Aside from the Department of Civil Engineering's Computer Laboratory, the PUP Information and Communications Technology Office provides University-wide computing resources that support instruction, research, communication, and academic services. Its facilities include **ICTO Computer Laboratories 1 and 2**, which are used for computer-based training, workshops, examinations, seminars, and other technology-assisted activities.

Figure 6.92 *Photo documentation of ICTO Computer Laboratory 1, occasionally used for trainings and workshops involving use of computer devices that can be found at the ICT Office at the NALLRC.*

Figure 6.93 *Photo documentation of ICTO Computer Laboratory 2 used for computer lectures, classes, and other activities such as for research purposes and others which could also be found at the ICT Office at the NALLRC.*

The ICTO also manages the University's network infrastructure, system access, technical support, information security, database administration, and information systems development.. Among the major online services supported by the ICTO are **PUP Smart Interactive Technical Assistant** (SINTA), which handles inquiries and service requests; and the **Online Document Request System** (ODRS), which facilitates requests for academic records and certifications.

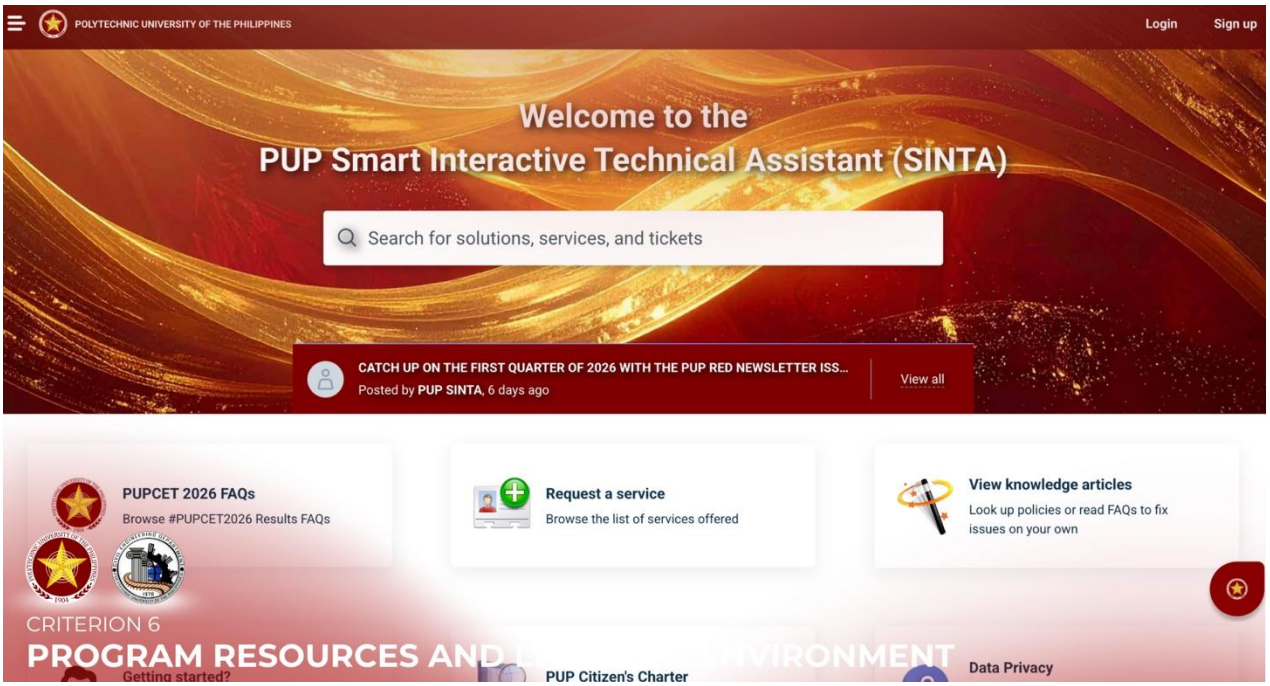


Figure 6.94 *A screenshot of the ICTO's PUP SINTA or the Smart Interactive Technical Assistant used to make requests to various offices of the university such as concerns, assistance, questions, and clarifications.*

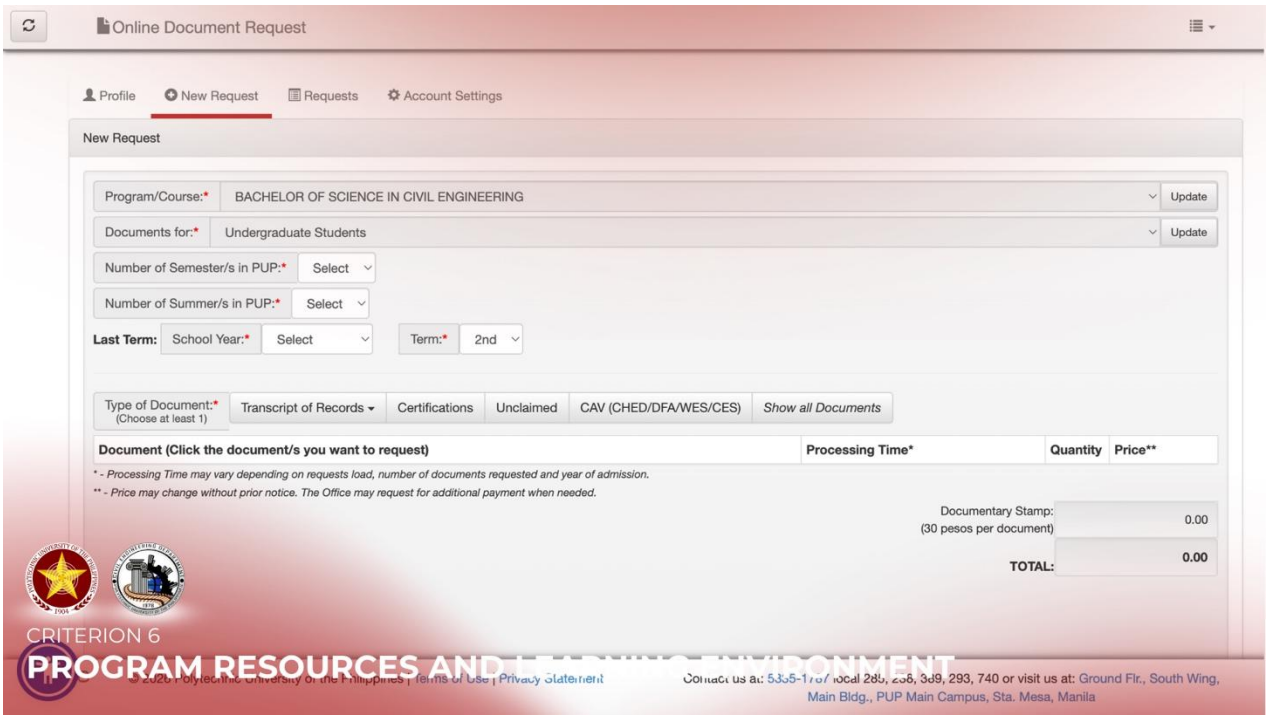


Figure 6.95 *A screenshot of the ODRS or the Online Document Request System utilized by the students and staff of the university to request for documents from various offices of the university, including the Office of the University Registrar, facilitated by the ICT Office.*

For the BSCE program, these resources support engineering computations, technical documentation, online research, communication, student records management, and technology-based learning. Together with the specialized computer laboratories of the College of Engineering, they contribute to an accessible, efficient, and supportive learning environment.

Students are also provided with institutional email accounts that may be used to access educational software and technology-related benefits. These include student access to **Autodesk Education products**, which support computer-aided drafting, modeling, and design activities relevant to the BSCE program, and **Visual Studio Dev Essentials**, which provides tools and resources for programming and software development. Collectively, these online services strengthen the University's digital learning environment and provide BSCE students with resources that support academic work, technical competency, and professional preparation.

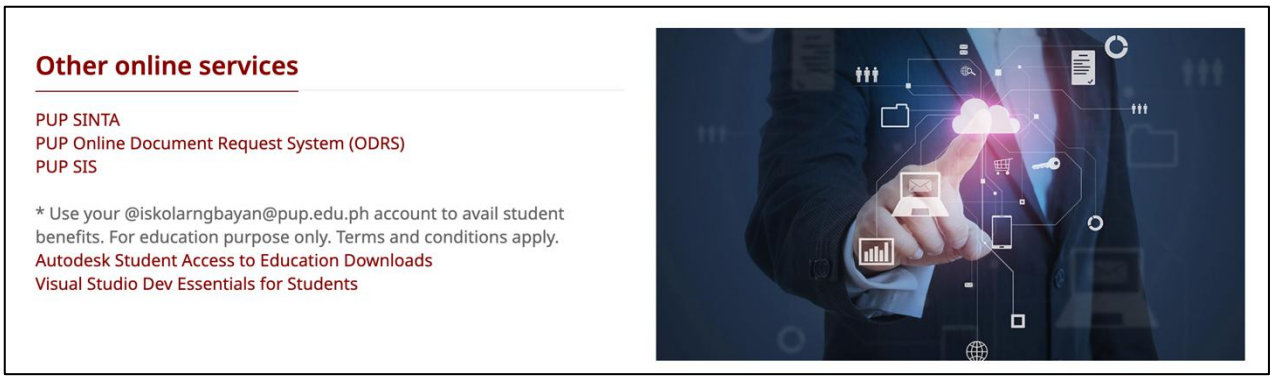


Figure 6.96 *A screenshot from the Polytechnic University of the Philippines website of other online services available to its students and constituents, including access of software through the provision of institutional webmail accounts.*

B.2. The Use of Office 365

The Polytechnic University of the Philippines provides its faculty, staff, and students with access to Office 365 as part of its digital services, particularly through the PUP Webmail system. This platform supports communication, collaboration, and file management within the University, enabling users to access email and other online productivity tools essential to academic and administrative work. Through Office 365, members of the PUP community are given a reliable and accessible means of exchanging information, managing documents, and maintaining connectivity across various offices and academic units.

As part of its service functions, Office 365 processes and collects the content of files and communications when necessary to deliver the products being used. For instance, when a user receives an email through Outlook or Exchange Online, the system collects the content of that message in order to deliver it to the inbox, display it properly, allow the user to reply, and store it until it is deleted. This may include the content of documents, photos, music, or videos uploaded to services such as OneDrive, as well as communications sent or received through Office 365 applications.

The data handled by the platform may include the subject line and body of emails, the text or other content of instant messages, the audio and video recording of video messages, and the audio recording and transcript of voice messages or dictated text messages. Through this system, the University is able to provide its stakeholders with a modern digital communication environment that supports both academic productivity and institutional operations.

B.3. LEARNING MANAGEMENT SYSTEM AND PUP STUDENT INFORMATION SYSTEM

The BSCE program utilizes institutional computing resources such as the Learning Management System (LMS) and the PUP Student Information System (SIS) to support instruction, communication, academic monitoring, and student services. These platforms provide students and faculty with accessible digital resources for course delivery, submission of requirements, assessment, class scheduling, enrollment, and monitoring of academic records. The systems support flexible learning and enhance the overall learning environment of the program through efficient access to academic information and instructional resources.

Figure 6.97 *PUP Learning Management System (PUP LMS). The official online learning platform of the Polytechnic University of the Philippines used for course delivery, instructional materials, assessments, and virtual learning support for BS Civil Engineering students.*

The Polytechnic University of the Philippines utilizes the PUP Learning Management System (PUP LMS), an online learning platform powered by Moodle, to support flexible and technology-enabled instruction in the BS Civil Engineering program. The system

provides students and faculty with access to digital learning materials, online discussions, assignments, quizzes, course modules, and assessment tools through a secure and integrated virtual learning environment. The LMS enhances accessibility to instructional resources and supports continuous learning beyond the classroom by allowing students to conveniently access course requirements, laboratory activities, and academic references anytime and anywhere. The platform also promotes efficient communication and monitoring of student learning progress, contributing to the effective delivery of outcomes-based engineering education.

The PUP Student Information System (PUP SIS) serves as the university's centralized online academic information and student service platform. The system supports the BS Civil Engineering program by providing students and faculty with efficient access to enrollment services, class schedules, grades, curriculum information, and other academic records. Through the SIS, students can monitor their academic progress and manage essential school transactions in a timely and organized manner. The platform enhances administrative efficiency, accessibility of academic information, and communication between the university and students, thereby contributing to a responsive and student-centered learning environment.

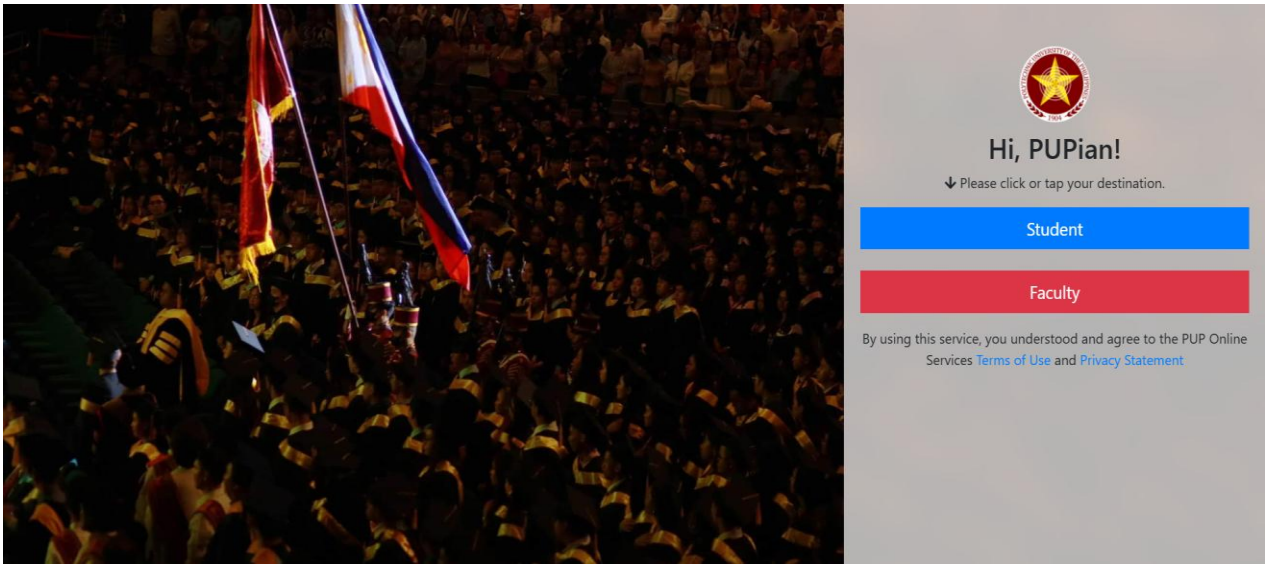


Figure 6.98 *PUP Student Information System (PUP SIS). The university's centralized online academic information system used for enrollment, class scheduling, grade viewing, and management of student academic records and services.*

B.4. IT and Data Privacy Policy

The Polytechnic University of the Philippines (PUP) has established a comprehensive IT and Data Privacy policy to ensure the protection of personal data and the privacy of users. The policy outlines the data collected, the purposes for which it is used, and the measures

taken to protect the data. PUP collects data through various online services, including the official website, apps, social media channels, and digital materials. The university ensures that the data collected is used for legitimate purposes, such as promoting the university and providing a customized experience for users. PUP also emphasizes the importance of user choices regarding data collection and the impact of not providing necessary data on the use of services. The policy applies to all services provided by PUP and may have separate privacy statements for other sites or apps linked to the university's services. PUP takes security measures to protect data obtained from third parties and ensures that the data collected is used to operate effectively and provide the best experiences with the university's services.

The summary of the policy can be viewed on the PUP website (https://www.pup.edu.ph/privacy/).

C. GUIDANCE

[Describe how students in the program are provided appropriate guidance regarding the use of the tools, equipment, computing resources, and laboratories including instructions on safety practices. Provide list of applicable documents.]

Students in the BS Civil Engineering (BSCE) program are provided with comprehensive and systematic guidance in the use of tools, equipment, computing resources, and laboratories, with emphasis on **health, safety, and proper operational practices**, through structured orientations, faculty-led instruction, and continuous supervision. At the beginning of every semester, professors handling laboratory and computing courses devote the first day of classes to discussing laboratory policies, health and safety practices, and the proper use of facilities. This includes a clear explanation of laboratory rules, standard operating procedures, safe work practices, and the do’s and don’ts in handling tools, equipment, and software applications, ensuring a safe and conducive learning environment.

C.1 Laboratory Orientations and Safety Briefings

For each laboratory-based course, students undergo a formal orientation facilitated by faculty members, in coordination with laboratory technicians and technical personnel. During these orientations, students are introduced to the correct handling, operation, and basic maintenance of laboratory tools and equipment, as well as the appropriate use of computing resources and licensed software. In computing laboratories, faculty members

provide hands-on demonstrations and supervised exercises on applications such as AutoCAD, MIDAS, and ArcGIS to ensure that students develop technical proficiency while following proper usage protocols (Attachment C6-20 - Class Orientation PowerPoint).

Figure 6.99 *Engr. Ruffa S. Roxas, Laboratory Head of Civil Engineering Laboratories, delivers a talk on Laboratory Guidelines during the Salubong 2025 Freshmen Orientation. Held on November 8, 2025, at Bulwagang Balagtas, PUP Main, Sta. Mesa, the session highlighted the importance of safety, discipline, and proper laboratory practices for incoming Civil Engineering students.*

Figure 6.100 *An introductory presentation outlining laboratory policies, safety protocols, and operational guidelines for students of the Polytechnic University of the Philippines College of Engineering.*

The Civil Engineering Department of the Polytechnic University of the Philippines (PUP) has strengthened its commitment to student preparedness, safety, and responsible laboratory use through a comprehensive orientation initiative. Aside from the regular class-based orientation on laboratory use, safety protocols, and guidelines, the department also conducts an ***Overall Orientation*** *for all* ***Civil Engineering students*** *at the* ***Bulwagang Balagtas***. This larger gathering serves as an avenue to ensure that every student is properly informed about the standards and expectations in the use of laboratory facilities.

During the orientation, the Laboratory Head discusses the relevant policies and processes pertaining to laboratory rules and regulations. These include proper laboratory use, observance of safety measures, procedures for borrowing and returning apparatus, room reservation protocols, and other important guidelines that promote order, accountability, and efficiency. Through this initiative, the department aims to cultivate discipline, awareness, and responsibility among Civil Engineering students while ensuring a safe and organized learning environment (Attachment C6-21 - BSCE Laboratory Orientation PowerPoint).

C.2. Use of PPE and Safety Notices, Signages and Posters

General safety protocols, including proper attire, the use of personal protective equipment (PPE), safe equipment operation, and emergency response procedures, are consistently reinforced through orientations, posted signages, instructional materials, and online resources made accessible through the university's learning management system. Students conducting laboratory experiments, particularly in courses such as Construction Materials and Testing, are required to wear the appropriate PPE to ensure their protection during hands-on activities. This includes the use of safety shoes, gloves, masks, hard hats, goggles, and other protective equipment whenever necessary, depending on the nature of the experiment. The strict observance of these requirements helps minimize risks and promotes a culture of safety and preparedness among students.

Collectively, these measures ensure that BS Civil Engineering students are not only equipped with the technical competencies required for civil engineering practice but are also trained to uphold high standards of safety, responsibility, and ethical conduct in all laboratory and computing environments. By integrating safety protocols into laboratory instruction and practice, the department reinforces the importance of discipline, accountability, and professional behavior, which are essential qualities of future civil engineers.

Figure 6.101 *Students of CIEN 301 Geotechnical Engineering 1 perform a Sieve Analysis while properly geared in their PPE, applying theoretical knowledge to real laboratory practice and ensuring safety every step of the way.*

The Civil Engineering Department places utmost importance on safety in all laboratory and computing activities. To strengthen safety awareness and encourage compliance, the CE laboratory ensures that safety posters, notices, and hazard warnings are displayed in strategic locations throughout the department where laboratory activities are conducted. These signages are carefully positioned in areas that are highly visible and easy to read, serving as constant reminders to both students and faculty of the safety measures that must always be observed. This practice reflects the department's firm commitment to maintaining a safe, orderly, and responsible laboratory environment at all times (Attachment C6-22 - Photos of Safety Signages and Posters).

Figure 6.102 *Safety Notices and Posters*

C.3. The Use of Laboratory Manuals

In addition, laboratory manuals are carefully prepared and distributed to students to serve as essential guides in the conduct of laboratory experiments. These manuals, developed by the faculty members together with the Laboratory Head, are specifically designed for the courses Construction Materials and Testing, Geotechnical Engineering, Hydraulics, and Surveying. Each manual contains detailed safety guidelines, step-by-step operational procedures, emergency protocols, and the corresponding standards used in the laboratory activities. By providing clear instructions and technical references, the manuals help ensure that students perform their experiments properly, safely, and in accordance with established engineering practices (Attachment C6-23 - Copies of the Laboratory Manuals).

Soft copies of these laboratory manuals are given to students during the first week of classes so that they may use them as reference materials throughout the semester. Having access to the manuals at the beginning of the course allows students to prepare in advance for their laboratory work, understand the objectives and procedures of each experiment, and become familiar with the required precautions and standards before performing actual activities. This practice promotes better readiness, active participation, and more responsible use of laboratory resources.

Moreover, the use of these laboratory manuals contributes significantly to the attainment of Student Outcomes in line with the outcomes-based education policies of the Philippine Technological Council (PTC) and the Commission on Higher Education (CHED). Through the manuals, students are guided in applying engineering knowledge, following standard methods, analyzing data, conducting experiments, and interpreting results systematically. They also develop discipline, accuracy, teamwork, and awareness of safety, ethical responsibility, and professional practice in laboratory work. In this way, the manuals do not only support the technical conduct of experiments but also help strengthen the competencies expected of Civil Engineering graduates under outcomes-based education.

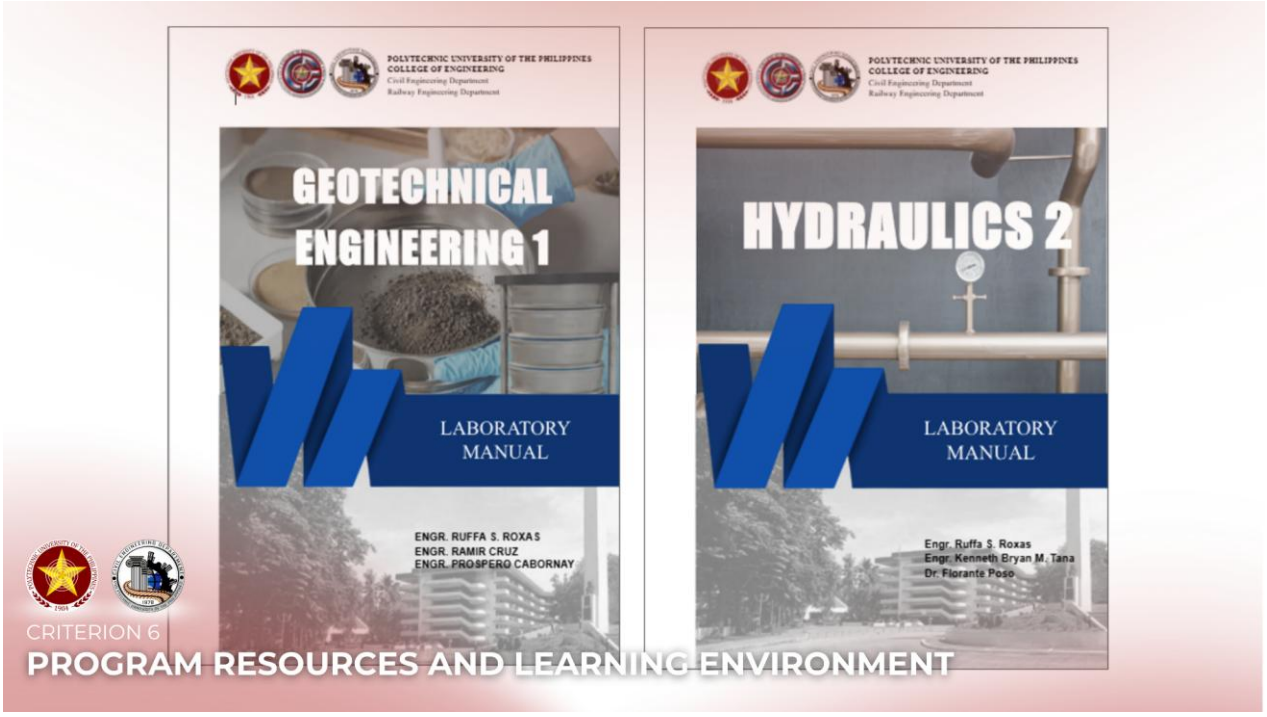


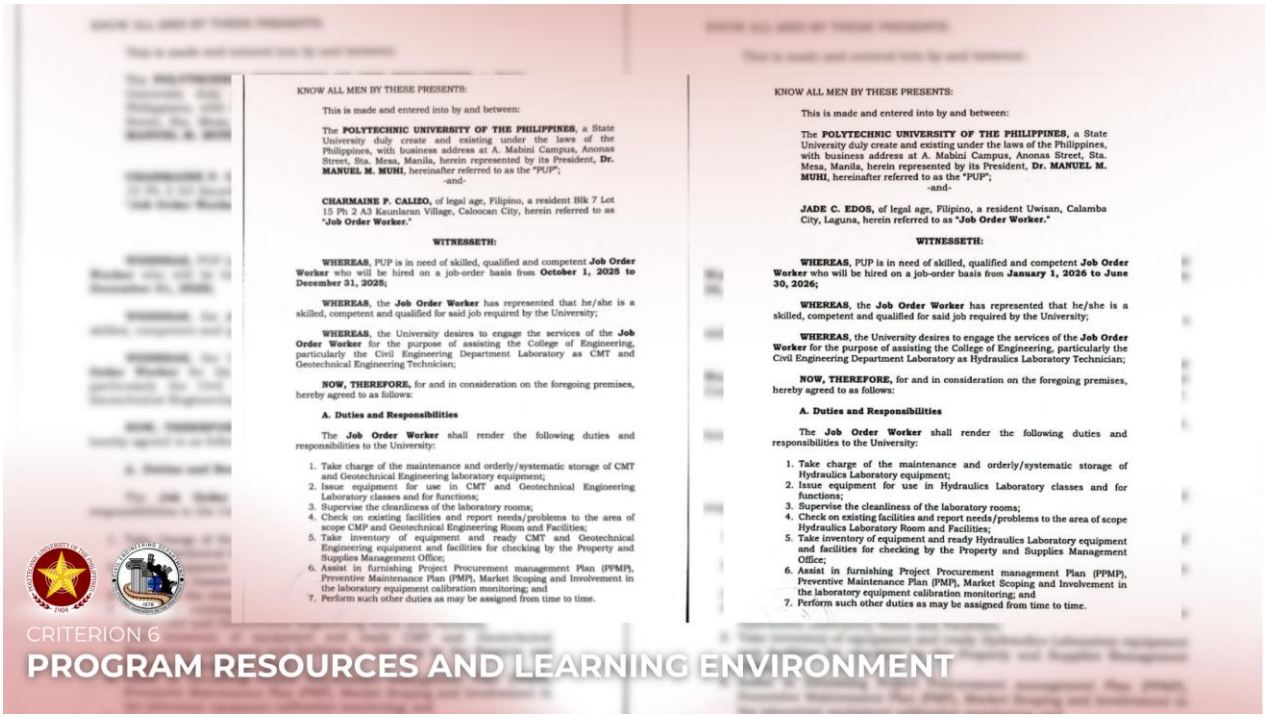
Figure 6.103 *Sample of Course-Specific Laboratory Manuals. Laboratory manuals for Geotechnical Engineering 1 and Hydraulics 2 prepared to provide structured guidance, standardized procedures, and technical references in support of effective laboratory instruction and student learning.*

C.4. The Role of Faculty, Laboratory Technicians and Student Assistants

Each laboratory class is closely supervised not only by faculty members but also by the department's two laboratory technicians and student assistants, all of whom play important roles in the safe and effective conduct of laboratory activities. While faculty members provide overall academic supervision and ensure that laboratory objectives are achieved, the laboratory technicians and student assistants offer additional operational and safety support during the conduct of experiments. This collaborative setup strengthens the department's implementation of safety protocols and helps maintain an organized and secure learning environment for all students.

The laboratory technicians are primarily responsible for assisting in the operation, preparation, maintenance, and monitoring of laboratory equipment and apparatus. Their presence helps ensure that all equipment is in proper working condition, safe to use, and ready for laboratory activities. By carefully checking the functionality and condition of apparatus before and during use, they help minimize risks, prevent equipment-related accidents, and support the smooth flow of experiments. Their technical assistance is especially valuable in guiding the proper handling and operation of equipment, thereby promoting safe and correct laboratory practices among students (Attachment C6-24 - BSCE Laboratory Personnel and Staffing).

The student assistants, on the other hand, help monitor specific laboratory activities to ensure that safety measures are consistently observed throughout the session. They support the implementation of laboratory rules by helping oversee student movement, reminding classmates of proper procedures, and encouraging compliance with safety protocols. In addition, they help maintain cleanliness and orderliness in all laboratories, which further contributes to the prevention of hazards and the creation of a conducive environment for learning.



KNOW ALL MEN BY THESE PRESENTS:

This is made and entered into by and between:

The **POLYTECHNIC UNIVERSITY OF THE PHILIPPINES**, a State University duly create and existing under the laws of the Philippines, with business address at A. Mabini Campus, Anonas Street, Sta. Mesa, Manila, herein represented by its President, **Dr. MANUEL M. MUHI**, hereinafter referred to as the "PUP";

-and-

CHARMAINE P. CALIZO, of legal age, Filipino, a resident Blk 7 Lot 15 Ph 2 A3 Kaunlaran Village, Caloocan City, herein referred to as **"Job Order Worker."**

WITNESSETH:

WHEREAS, PUP is in need of skilled, qualified and competent **Job Order Worker** who will be hired on a job-order basis from **October 1, 2025 to December 31, 2025;**

WHEREAS, the **Job Order Worker** has represented that he/she is a skilled, competent and qualified for said job required by the University;

WHEREAS, the University desires to engage the services of the **Job Order Worker** for the purpose of assisting the College of Engineering, particularly the Civil Engineering Department Laboratory as CMT and Geotechnical Engineering Technician;

NOW, THEREFORE, for and in consideration on the foregoing premises, hereby agreed to as follows:

A. Duties and Responsibilities

The **Job Order Worker** shall render the following duties and responsibilities to the University:

1. Take charge of the maintenance and orderly/systematic storage of CMT and Geotechnical Engineering laboratory equipment;
2. Issue equipment for use in CMT and Geotechnical Engineering Laboratory classes and for functions;
3. Supervise the cleanliness of the laboratory rooms;
4. Check on existing facilities and report needs/problems to the area of scope CMP and Geotechnical Engineering Room and Facilities;
5. Take inventory of equipment and ready CMT and Geotechnical Engineering equipment and facilities for checking by the Property and Supplies Management Office;
6. Assist in furnishing Project Procurement management Plan (PPMP), Preventive Maintenance Plan (PMP), Market Scoping and Involvement in the laboratory equipment calibration monitoring; and
7. Perform such other duties as may be assigned from time to time.

KNOW ALL MEN BY THESE PRESENTS:

This is made and entered into by and between:

The **POLYTECHNIC UNIVERSITY OF THE PHILIPPINES**, a State University duly create and existing under the laws of the Philippines, with business address at A. Mabini Campus, Anonas Street, Sta. Mesa, Manila, herein represented by its President, **Dr. MANUEL M. MUHI**, hereinafter referred to as the "PUP";

-and-

JADE C. EDOS, of legal age, Filipino, a resident Uwisan, Calamba City, Laguna, herein referred to as **"Job Order Worker."**

WITNESSETH:

WHEREAS, PUP is in need of skilled, qualified and competent **Job Order Worker** who will be hired on a job-order basis from **January 1, 2026 to June 30, 2026;**

WHEREAS, the **Job Order Worker** has represented that he/she is a skilled, competent and qualified for said job required by the University;

WHEREAS, the University desires to engage the services of the **Job Order Worker** for the purpose of assisting the College of Engineering, particularly the Civil Engineering Department Laboratory as Hydraulics Laboratory Technician;

NOW, THEREFORE, for and in consideration on the foregoing premises, hereby agreed to as follows:

A. Duties and Responsibilities

The **Job Order Worker** shall render the following duties and responsibilities to the University:

1. Take charge of the maintenance and orderly/systematic storage of Hydraulics Laboratory equipment;
2. Issue equipment for use in Hydraulics Laboratory classes and for functions;
3. Supervise the cleanliness of the laboratory rooms;
4. Check on existing facilities and report needs/problems to the area of scope Hydraulics Laboratory Room and Facilities;
5. Take inventory of equipment and ready Hydraulics Laboratory equipment and facilities for checking by the Property and Supplies Management Office;
6. Assist in furnishing Project Procurement management Plan (PPMP), Preventive Maintenance Plan (PMP), Market Scoping and Involvement in the laboratory equipment calibration monitoring; and
7. Perform such other duties as may be assigned from time to time.

Figure 6.104 *Formalizing Roles in Support of Academic Excellence. The Polytechnic University of the Philippines enters into Job Order Agreements for qualified personnel assigned to the Civil Engineering Laboratories, reinforcing its commitment to efficient laboratory operations, technical support, and the continuous delivery of quality engineering education.*

Figure 6.105 *Engr. Ruffa S. Roxas, Laboratory Head of Civil Engineering Laboratories, supervises the Laboratory Technician during maintenance work on the Universal Testing Machine, reinforcing the importance of equipment readiness, accuracy, and safety in laboratory operations.*

Figure 6.106 *A CMT Laboratory Technician Charmaine P. Calizo supervises students as they perform the Los Angeles (LA) Abrasion Test, ensuring proper procedures, safety compliance, and accurate evaluation of aggregate durability in accordance with standard testing methods.*

Figure 6.107 *Civil Engineering Laboratory Technician Jade C. Edos assists students in the proper use of hydraulics laboratory equipment, ensuring correct procedures and safe operation.*

Figure 6.108 *Student Assistant supports laboratory operations by facilitating transactions and maintaining the utilization log for accurate record-keeping and efficient facility management.*

Figure 6.109 *A student assistant conducts equipment inspection and organization in the Civil Engineering Laboratories, ensuring readiness, accuracy, and proper maintenance of instruments essential for laboratory instruction and experimentation*.

This initiative significantly contributes to the safety of all laboratory activities by providing multiple levels of supervision and support. With faculty members overseeing instruction, laboratory technicians ensuring equipment safety and operational readiness, and student assistants helping monitor activities and maintain cleanliness, the department is able to promote a culture of safety, accountability, and discipline. Through this coordinated effort, risks are minimized, laboratory resources are properly managed, and students are able to perform hands-on activities with greater confidence and security.

C.5. The CE Laboratory Guidelines for Equipment and Facility Usage

The *Guidelines for the Use of Civil Engineering Laboratories, Equipment and Facilities* of PUP provide a comprehensive framework for the safe, orderly, and efficient use of laboratory rooms, tools, equipment, and special facilities of the Civil Engineering Department. The document emphasizes that the main purpose of the guidelines is to facilitate the proper use of CE laboratories, ensure the safekeeping of facilities and equipment, and provide fair access to bonafide students and faculty members. It details the procedures for borrowing laboratory items and room keys, including approved users, scheduling, reservations, surrender of identification cards, logbook entries, and the proper return of borrowed materials. It also defines the responsibilities of borrowers in maintaining cleanliness, preserving the condition of apparatus, reporting damage or loss,

and ensuring that rooms are left secure, orderly, and ready for the next users. In addition, the guidelines cover the use of special equipment, such as the oven, and present process flows for borrowing rooms, keys, tools, and equipment to make laboratory transactions systematic and well-monitored (Attachment C6-25 - BSCE Laboratory Guidelines).

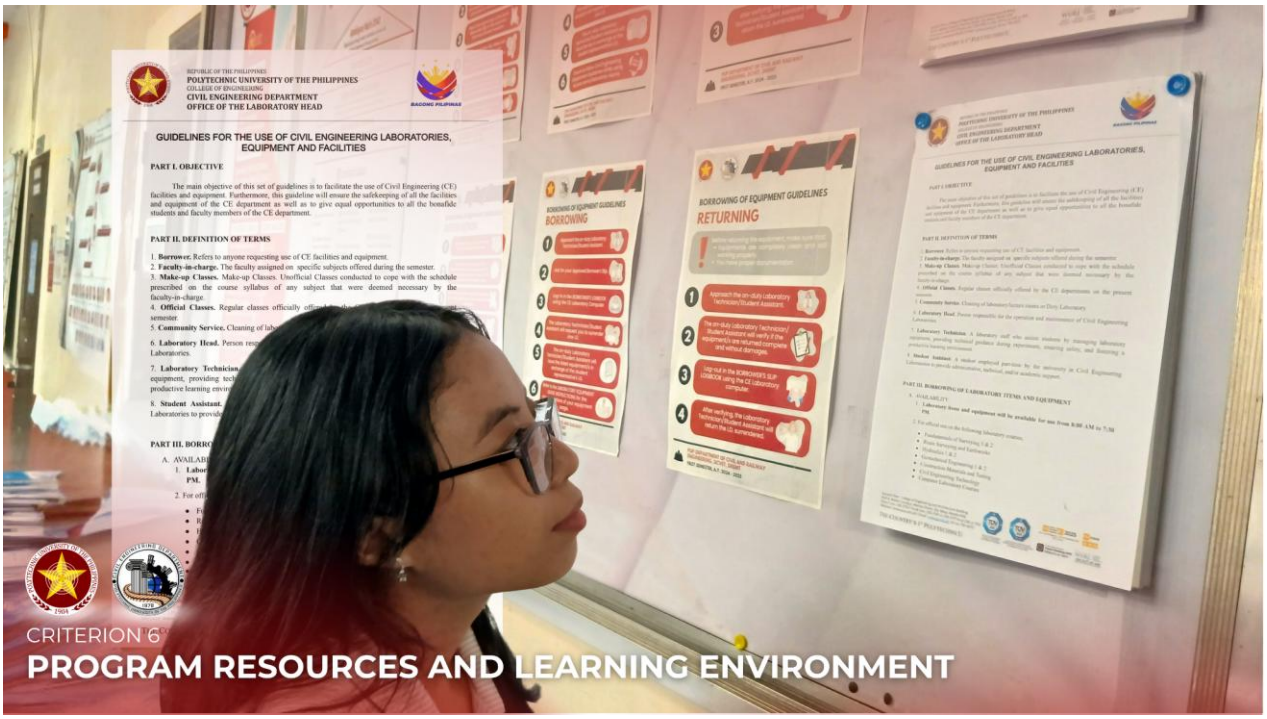


Figure 6.110 *Guidelines for the Use of Civil Engineering Laboratories, Equipment and Facilities are displayed on designated bulletin boards of Civil Engineering Laboratory in the College of Engineering to maintain consistent visibility and serve as a reference for students and clients.*

The guidelines place strong emphasis on safety, discipline, and accountability. They include general safety rules, precautionary measures, housekeeping requirements, proper use of personal protective equipment, and prohibitions against unsafe acts such as leaving experiments unattended, mishandling equipment, or engaging in disruptive behavior inside the laboratories. The document also provides sanctions for violations related to cleanliness, vandalism, improper logging, delayed return of borrowed items, damage to equipment, and unauthorized use of computer laboratory resources, with corresponding penalties intended to reinforce responsible behavior. Through these provisions, the guidelines contribute significantly to the attainment of student outcomes because they train students to conduct experiments properly, follow established procedures, use engineering tools and facilities responsibly, and observe safety and ethical standards expected in professional engineering practice. They also help develop discipline, teamwork, accountability, and respect for shared resources, while strengthening students' ability to perform laboratory work systematically and safely. In this

way, the guidelines support the development of technical competence as well as the professional values, responsibility, and safety consciousness expected of Civil Engineering graduates under outcomes-based education.

D. MAINTENANCE AND UPGRADING OF FACILITIES

Describe the policies and procedures for maintaining and upgrading the tools, equipment, computing resources, and laboratories used by students and faculty in the program. Provide calibration records of laboratory equipment/apparatus where applicable. Define the relevant student outcome (SO) and provide the performance data to demonstrate the alignment.

D.1. Maintenance of Buildings

The Facility Management Office (FaMO) plans and directs the operations and functions of the various administrative services offices in the University Main Campus, namely Civil and Sanitary Services, Lights, Sounds Unit and Aircon and Metal Works, Building Maintenance Services, Grounds Maintenance Services, Electrical Maintenance Services. FaMO is focused on the efficient and effective delivery of support services for the facilities in the Main Building to maintain, secure and improve physical fixed assets (building, grounds, road system, electrical, utilities, etc.) of the University. One of its goals is to provide safe, reliable and professional work in order to obtain the University's mission of providing quality service and facilities. The office caters in-house maintenance, rehabilitation, renovation and repair of the structures/facilities in Polytechnic University of the Philippines. Facility and Equipment Maintenance includes: Overall environmental regulatory record keeping and oversight, hazardous waste disposal, manifest timely and reliable maintenance, preventive maintenance, corrective Maintenance (Building works, Electrical works, Lights and Sounds, Aircon and Metal works), repair and inspection of administration buildings, maintenance of facilities and equipment's, classrooms, venue areas and the like. The Facility Management Office is directly reporting to the Office of the Vice President for Administration. Each section has a section chief that reports directly to the head of the office.

The structures and facilities located at the NDC Campus including the PUP College of Engineering and Architecture Building, are maintained under the supervision and direction of the M.H del Pilar Director Jean Paul G. Martirez. Maintenance under M.H. del Pilar Campus Director is grouped into Three (3) sections lead by chief and/or managers including the (1) Building, Grounds and Equipment Maintenance Section, (2) NDC Campus

Administration Section and (3) Hasmin Hotel. In the absence of assigned chief, the Director of the maintenance office takes over the maintenance operation and management.

The University maintains and upgrades laboratory tools and equipment through its assigned laboratory custodian who conducts inventory reports and orientation to students about its use and care. A service provider is also responsible for the calibration and maintenance of laboratory equipment.

The Facility Management Office is divided into five sections: First, Building Maintenance sees to the general maintenance of all buildings in the University and Campuses. Building Maintenance includes carpentry works, which is responsible for routine or specially requested carpentry jobs and projects such as shelves, locks, doors, frames and flooring. The Building Section is also responsible for regular and scheduled painting or specially requested jobs and projects involving walling, texturing, refinishing and other miscellaneous services. They are also responsible for the maintenance and repair of all domestic plumbing and piping systems on campus. Second, the Electrical Maintenance Section is responsible for the installation, repair, tie-in and maintenance of all University electrical systems. These include the high voltage distribution system, building lighting and other electrical systems and equipment. Third, the Lights, Sounds unit, Aircon and Metal Works section plans, organizes, coordinates and supervises the proper upkeep, repair and maintenance of air conditioning units, refrigeration, pumps and motors Air Conditioning Section is responsible as well as assist with the coordination of equipment such as tables and chairs, podiums, set-up and tear down of equipment. Fourth, Grounds Maintenance Section is responsible for maintaining the grounds of the campus and lastly, Civil and Sanitary Services Section is responsible for sanitation and orderliness of the campus.

Each section conducts regular inspection and evaluation of physical facilities, prepares program of work subject to the availability of funds under Maintenance and Other Operating Expenses. Minor and emergency repairs in response to submitted work requests are undertaken as soon as possible by the repair and maintenance staff as long as materials are available. If unavailable, the requesting party or office would be advised to either make an emergency purchase of the needed materials or process a purchase request through the Procurement Management Office.

D.2. Maintenance of ICT Facilities

Regular maintenance jobs for other facilities of the university such as cables, wires, fiber optics, copper UTP and wireless facilities are under the responsibility of the Information and Communications Technology Office. While the maintenance of ICTO laboratory equipment is being maintained by their laboratory heads and laboratory technicians. Major planning and installation of work are coursed through the Information and Communications Technology Office.

Since the ICT facilities of various units of the university are connected through LAN, ICT troubleshooting, repair and maintenance jobs are the responsibility of the Information and Communications Technology Office under the Executive Vice President. However, laboratory technicians also help in these tasks. Repair jobs at the various units in the university are done on a request basis, wherein the requesting party submits a letter of intent to ICTO. The technician then evaluates the requested job if approved, schedules the repair, provided all the needed materials and resources are available.

D.3. Facilities Maintenance, History of Repair and Upgrading

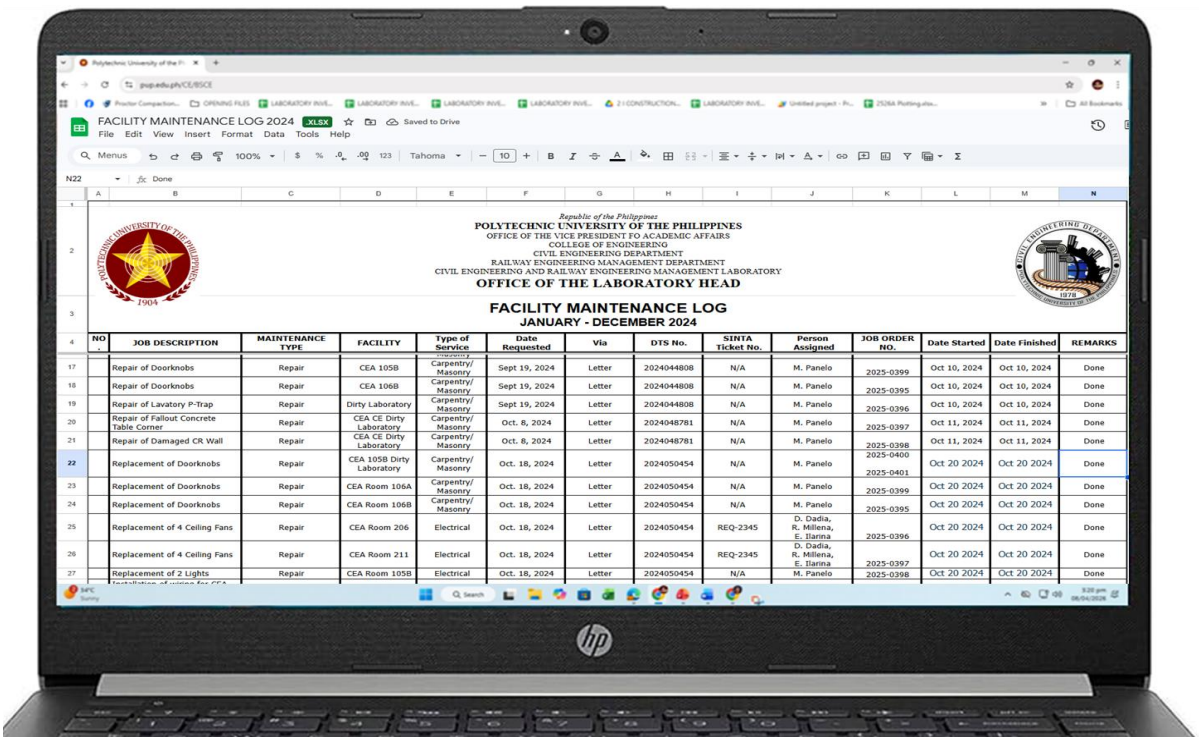
To ensure continuous operational readiness, the College utilizes a multi-tiered maintenance strategy:

- **Internal Technical Support:** To ensure uninterrupted instructional delivery, an on-site laboratory technician is dedicated to immediate troubleshooting and the execution of routine repairs. Furthermore, the CE Laboratory Office maintains comprehensive documentation of all facility operations, including a historical archive of preventive and corrective maintenance activities, as well as detailed logs of the actual repairs performed on specialized equipment and tools.
- **External Repair (or Calibration) Escalation:** In instances where facility or equipment damage exceeds internal repair capabilities, the CE Laboratory Head initiates a formal request to the Facility and Management Office for facility-related issues and to the Budget Services Office for the equipment repair. Once the budget is allocated, the request will be forwarded to the Procurement Management Office. This process triggers a preliminary technical evaluation to determine the necessity of external professional service providers.

- **Facility Upkeep:** Dedicated janitorial staff are responsible for the daily sanitation and orderliness of the laboratories. Students are also held accountable for maintaining a clean workspace, with non-compliance subject to established administrative sanctions.

Maintenance of Facilities in the Civil Engineering Department

The Facility Maintenance Logs reflect the Civil Engineering Department's systematic and proactive approach to maintaining its laboratories, classrooms, and support facilities. The logs show that maintenance activities are properly documented through a structured monitoring system that records the job description, maintenance type, facility concerned, type of service required, date requested, mode of request, control or ticket numbers, personnel assigned, dates of implementation, and remarks on the status of the work. Through this process, the department can monitor maintenance concerns in an organized manner and ensure that repairs and improvements are acted upon promptly and properly documented (Attachment C6-26 - BSCE Laboratory Preventive and Corrective Maintenance Log).



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OFFICE OF THE VICE PRESIDENT FO ACADEMIC AFFAIRS
COLLEGE OF ENGINEERING
CIVIL ENGINEERING DEPARTMENT
RAILWAY ENGINEERING MANAGEMENT DEPARTMENT
CIVIL ENGINEERING AND RAILWAY ENGINEERING MANAGEMENT LABORATORY
OFFICE OF THE LABORATORY HEAD

FACILITY MAINTENANCE LOG
JANUARY - DECEMBER 2024

NO.	JOB DESCRIPTION	MAINTENANCE TYPE	FACILITY	Type of Service	Date Requested	Via	DTS No.	SINTA Ticket No.	Person Assigned	JOB ORDER NO.	Date Started	Date Finished	REMARKS
17	Repair of Doorknobs	Repair	CEA 105B	Carpentry/ Masonry	Sept 19, 2024	Letter	2024044808	N/A	M. Panelo	2025-0399	Oct 10, 2024	Oct 10, 2024	Done
18	Repair of Doorknobs	Repair	CEA 106B	Carpentry/ Masonry	Sept 19, 2024	Letter	2024044808	N/A	M. Panelo	2025-0395	Oct 10, 2024	Oct 10, 2024	Done
19	Repair of Lavatory P-Trap	Repair	Dirty Laboratory	Carpentry/ Masonry	Sept 19, 2024	Letter	2024044808	N/A	M. Panelo	2025-0396	Oct 10, 2024	Oct 10, 2024	Done
20	Repair of Fallout Concrete Table Corner	Repair	CEA CE Dirty Laboratory	Carpentry/ Masonry	Oct. 8, 2024	Letter	2024048781	N/A	M. Panelo	2025-0397	Oct 11, 2024	Oct 11, 2024	Done
21	Repair of Damaged CR Wall	Repair	CEA CE Dirty Laboratory	Carpentry/ Masonry	Oct. 8, 2024	Letter	2024048781	N/A	M. Panelo	2025-0398	Oct 11, 2024	Oct 11, 2024	Done
22	Replacement of Doorknobs	Repair	CEA 105B Dirty Laboratory	Carpentry/ Masonry	Oct. 18, 2024	Letter	2024050454	N/A	M. Panelo	2025-0400 2025-0401	Oct 20 2024	Oct 20 2024	Done
23	Replacement of Doorknobs	Repair	CEA Room 106A	Carpentry/ Masonry	Oct. 18, 2024	Letter	2024050454	N/A	M. Panelo	2025-0399	Oct 20 2024	Oct 20 2024	Done
24	Replacement of Doorknobs	Repair	CEA Room 106B	Carpentry/ Masonry	Oct. 18, 2024	Letter	2024050454	N/A	M. Panelo	2025-0395	Oct 20 2024	Oct 20 2024	Done
25	Replacement of 4 Ceiling Fans	Repair	CEA Room 206	Electrical	Oct. 18, 2024	Letter	2024050454	REQ-2345	D. Dadia, R. Millena, E. Ilarina	2025-0396	Oct 20 2024	Oct 20 2024	Done
26	Replacement of 4 Ceiling Fans	Repair	CEA Room 211	Electrical	Oct. 18, 2024	Letter	2024050454	REQ-2345	D. Dadia, R. Millena, E. Ilarina	2025-0397	Oct 20 2024	Oct 20 2024	Done
27	Replacement of 2 Lights	Repair	CEA Room 105B	Electrical	Oct. 18, 2024	Letter	2024050454	N/A	M. Panelo	2025-0398	Oct 20 2024	Oct 20 2024	Done

Figure 6.111 *Facility Maintenance Log for a Fiscal Year, documenting repair and maintenance activities, service requests, assigned personnel, and completion status for facilities under the Civil Engineering and Railway Engineering Management Laboratory.*

Figure 6.112 *FAMO Personnel conduct concrete removal using a jackhammer as part of facility maintenance activities, ensuring safety and the continued functionality of the area*.

Figure 6.113 *FAMO personnel carry out fixture installation works, ensuring proper setup, safety compliance, and the continued functionality of university facilities.*

The maintenance works covered a wide range of corrective and preventive actions necessary for the safe and efficient operation of Civil Engineering facilities. The department also follows an accountable system for processing and tracking requests through letters, DTS numbers, and SINTA ticket numbers, with corresponding remarks indicating whether the work has been completed, is pending, or requires further action. This practice strengthens accountability, coordination, and follow-through in facility management. More importantly, the logs provide evidence of the department's commitment to ensuring that laboratories and related spaces remain functional, safe, clean, and conducive to learning. By keeping facilities in good working condition, the department helps support the effective delivery of laboratory instruction, protects equipment and resources, minimizes risks and disruptions, and sustains an environment that promotes student safety and quality learning experiences.

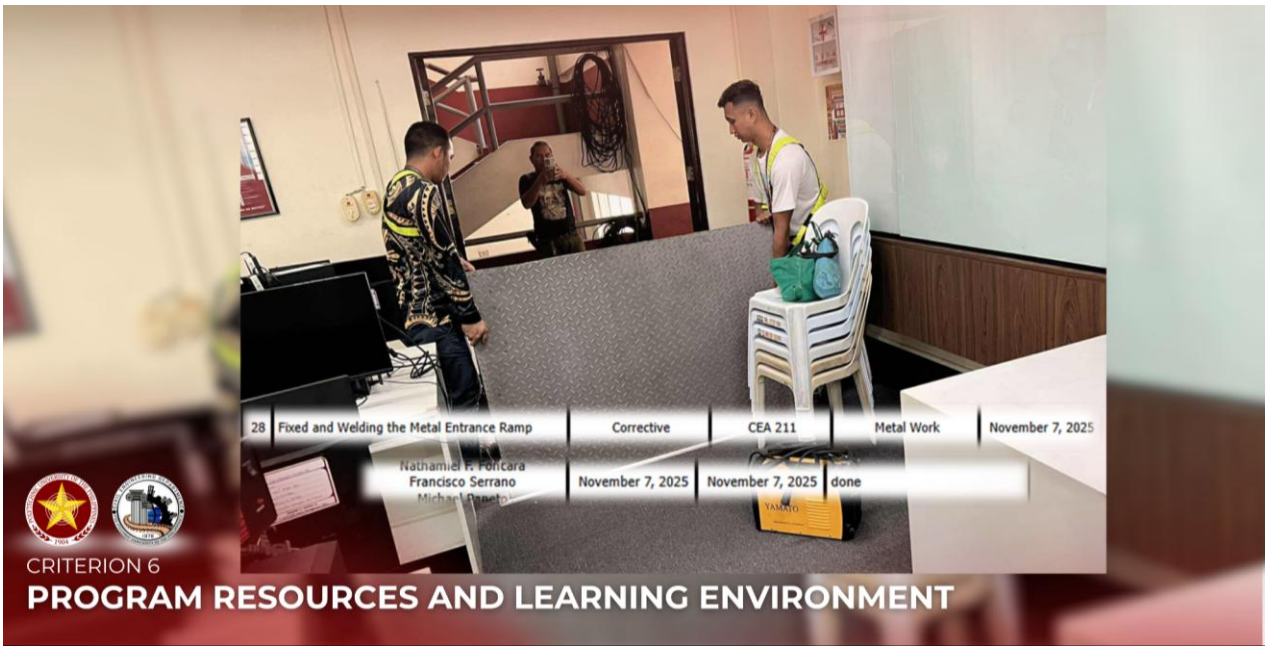


Figure 6.114 *FAMO personnel carry out the fixing of the metal entrance ramp in the Computer Laboratory, ensuring accessibility, safety, and proper facility maintenance*.

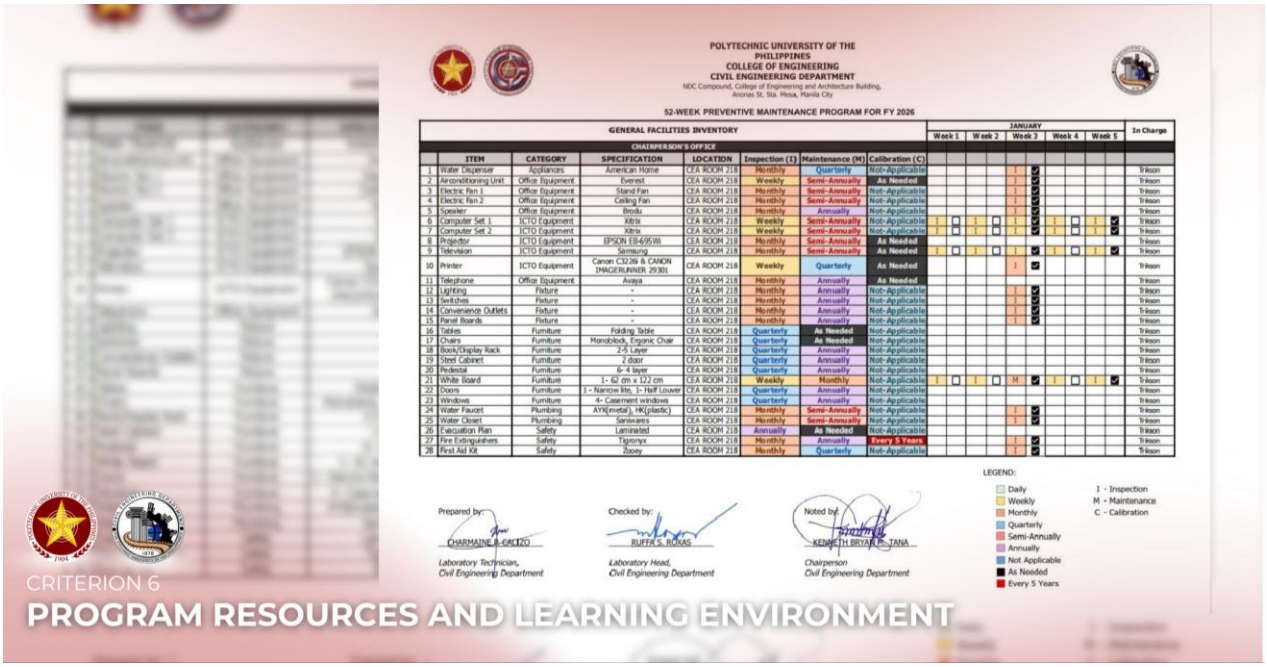
D.4. Maintenance of the Civil Engineering Laboratory Equipment and Apparatus

The Department of Civil Engineering of the Polytechnic University of the Philippines (PUP) upholds a systematic and proactive approach to the maintenance, calibration, and monitoring of its laboratory equipment and apparatus to ensure that all tools and facilities remain functional, accurate, and aligned with instructional and research needs.

To guarantee the safety, reliability, and instructional integrity of laboratory operations, the department implements established policies and procedures for the maintenance and upgrading of its facility, laboratory tools and equipment. These procedures are overseen

by the Laboratory Head, in coordination with laboratory technicians and trained student assistants, who are tasked with conducting regular inspections and ensuring that all equipment is in optimal working condition.

Equipment and apparatus in the various laboratories, including those used for soil mechanics, hydraulics, construction materials testing, and surveying, are subject to routine preventive maintenance to ensure their proper condition, functionality, and readiness for laboratory use. Preventive maintenance activities include scheduled cleaning, lubrication, recalibration, and visual inspection (Attachment C6-27 - BSCE Facilities and Equipment Maintenance Program and Monitoring).



POLYTECHNIC UNIVERSITY OF THE PHILIPPINES
COLLEGE OF ENGINEERING
CIVIL ENGINEERING DEPARTMENT
NDC Compound, College of Engineering and Architecture Building, Anonas St. Sta. Mesa, Manila City

52-WEEK PREVENTIVE MAINTENANCE PROGRAM FOR FY 2026

GENERAL FACILITIES INVENTORY
CHAIRPERSON'S OFFICE

	ITEM	CATEGORY	SPECIFICATION	LOCATION	Inspection (I)	Maintenance (M)	Calibration (C)	JANUARY Week 1	Week 2	Week 3	Week 4	Week 5	In Charge
1	Water Dispenser	Appliances	American Home	CEA ROOM 218	Monthly	Quarterly	Not-Applicable			I ✓			Trinson
2	Airconditioning Unit	Office Equipment	Everest	CEA ROOM 218	Weekly	Semi-Annually	As Needed			I ✓			Trinson
3	Electric Fan 1	Office Equipment	Stand Fan	CEA ROOM 218	Monthly	Semi-Annually	Not-Applicable			I ✓			Trinson
4	Electric Fan 2	Office Equipment	Ceiling Fan	CEA ROOM 218	Monthly	Semi-Annually	Not-Applicable			I ✓			Trinson
5	Speaker	Office Equipment	Brodu	CEA ROOM 218	Monthly	Annually	Not-Applicable			I ✓			Trinson
6	Computer Set 1	ICTO Equipment	Xitrix	CEA ROOM 218	Weekly	Semi-Annually	Not-Applicable	I ☐	I ☐	I ✓	I ☐	I ✓	Trinson
7	Computer Set 2	ICTO Equipment	Xitrix	CEA ROOM 218	Weekly	Semi-Annually	Not-Applicable	I ☐	I ☐	I ✓	I ☐	I ✓	Trinson
8	Projector	ICTO Equipment	EPSON EB-695Wi	CEA ROOM 218	Monthly	Semi-Annually	As Needed						Trinson
9	Television	ICTO Equipment	Samsung	CEA ROOM 218	Monthly	Semi-Annually	As Needed	I ☐	I ☐	I ✓	I ☐	I ✓	Trinson
10	Printer	ICTO Equipment	Canon C3226 & CANON IMAGERUNNER 2930i	CEA ROOM 218	Weekly	Quarterly	As Needed			I ✓			Trinson
11	Telephone	Office Equipment	Avaya	CEA ROOM 218	Monthly	Annually	As Needed						Trinson
12	Lighting	Fixture	-	CEA ROOM 218	Monthly	Annually	Not-Applicable			I ✓			Trinson
13	Switches	Fixture	-	CEA ROOM 218	Monthly	Annually	Not-Applicable			I ✓			Trinson
14	Convenience Outlets	Fixture	-	CEA ROOM 218	Monthly	Annually	Not-Applicable			I ✓			Trinson
15	Panel Boards	Fixture	-	CEA ROOM 218	Monthly	Annually	Not-Applicable			I ✓			Trinson
16	Tables	Furniture	Folding Table	CEA ROOM 218	Quarterly	As Needed	Not-Applicable						Trinson
17	Chairs	Furniture	Monoblock, Ergonic Chair	CEA ROOM 218	Quarterly	As Needed	Not-Applicable						Trinson
18	Book/Display Rack	Furniture	2-5 Layer	CEA ROOM 218	Quarterly	Annually	Not-Applicable						Trinson
19	Steel Cabinet	Furniture	2 door	CEA ROOM 218	Quarterly	Annually	Not-Applicable						Trinson
20	Pedestal	Furniture	6- 4 layer	CEA ROOM 218	Quarterly	Annually	Not-Applicable						Trinson
21	White Board	Furniture	1- 62 cm x 122 cm	CEA ROOM 218	Weekly	Monthly	Not-Applicable	I ☐	I ☐	H ✓	I ☐	I ✓	Trinson
22	Doors	Furniture	1 - Narrow lite, 1- Half Louver	CEA ROOM 218	Quarterly	Annually	Not-Applicable						Trinson
23	Windows	Furniture	4- Casement windows	CEA ROOM 218	Quarterly	Annually	Not-Applicable						Trinson
24	Water Faucet	Plumbing	AYK(metal), HK(plastic)	CEA ROOM 218	Monthly	Semi-Annually	Not-Applicable			I ✓			Trinson
25	Water Closet	Plumbing	Sanitwares	CEA ROOM 218	Monthly	Semi-Annually	Not-Applicable			I ✓			Trinson
26	Evacuation Plan	Safety	Laminated	CEA ROOM 218	Annually	As Needed	Not-Applicable						Trinson
27	Fire Extinguishers	Safety	Tigronyx	CEA ROOM 218	Monthly	Annually	Every 5 Years			I ✓			Trinson
28	First Aid Kit	Safety	Zooey	CEA ROOM 218	Monthly	Quarterly	Not-Applicable			I ✓			Trinson

LEGEND:
Daily
Weekly
Monthly
Quarterly
Semi-Annually
Annually
Not Applicable
As Needed
Every 5 Years
I - Inspection
M - Maintenance
C - Calibration

Prepared by: CHARMAINE A. CRUZ TO — Laboratory Technician, Civil Engineering Department
Checked by: RUFFE S. ROXAS — Laboratory Head, Civil Engineering Department
Noted by: KENNETH BRIAN P. TANA — Chairperson Civil Engineering Department

Figure 6.115 *52-Week Preventive Maintenance Program FY 2026. A structured schedule outlining regular inspection, maintenance, and calibration of facilities and equipment to ensure operational efficiency, safety, and reliability within the Civil Engineering Department.*

If damage occurs during laboratory exercises or activities, the laboratory technicians and student assistants prepare an incident report for submission to the Laboratory Head for appropriate action. Records of monitoring, preventive maintenance, and related reports are properly filed in the Laboratory Head's office to ensure that all equipment and apparatus are accounted for, well-maintained, and ready for use in laboratory experiments (Attachment C6-28 - Copy of Incident Reports).

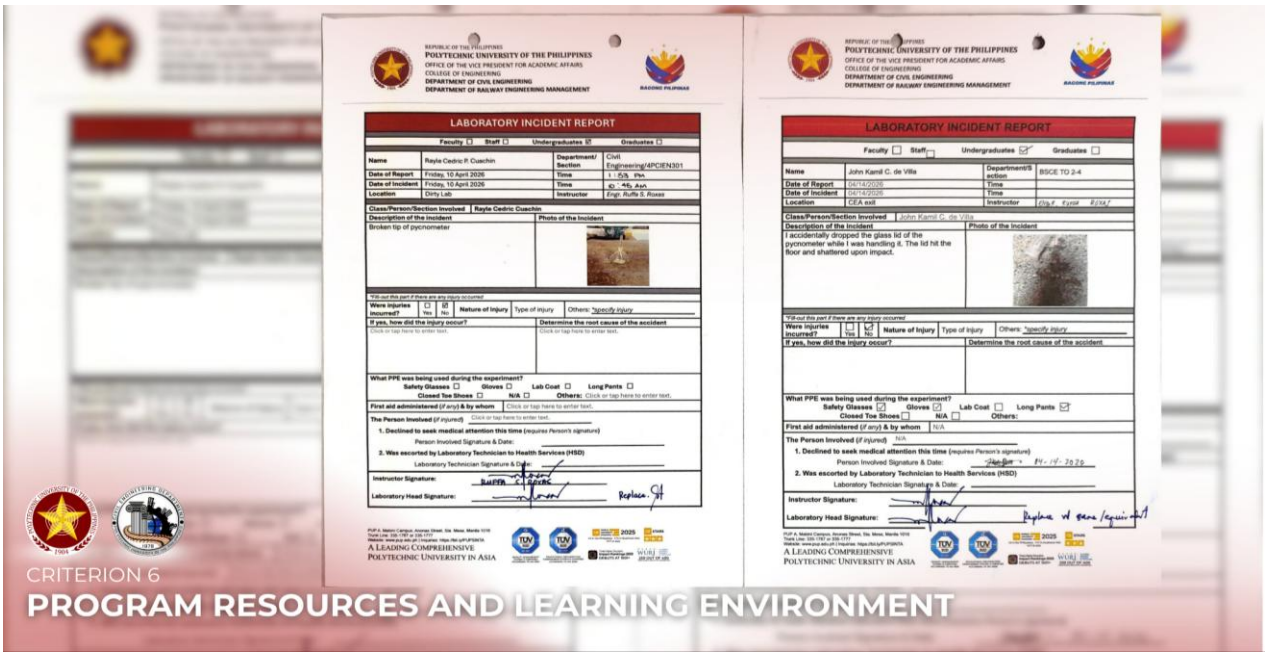


Figure 6.116 *Laboratory Incident Report. Sample of Standardized documentation used to record, assess, and address laboratory incidents, ensuring proper reporting, safety compliance, and continuous improvement of laboratory practices.*

To further promote safety within the laboratory premises, laboratory technicians also inspect the placement and visibility of signage and safety notices, as well as check the condition and availability of fire extinguishers and first aid kits. In addition, equipment manuals and laboratory manuals are readily available in the laboratory office as references for professors and students (Attachment C6-29 - Photos of Fire Extinguishers and First Aid Box in BSCE Facilities).

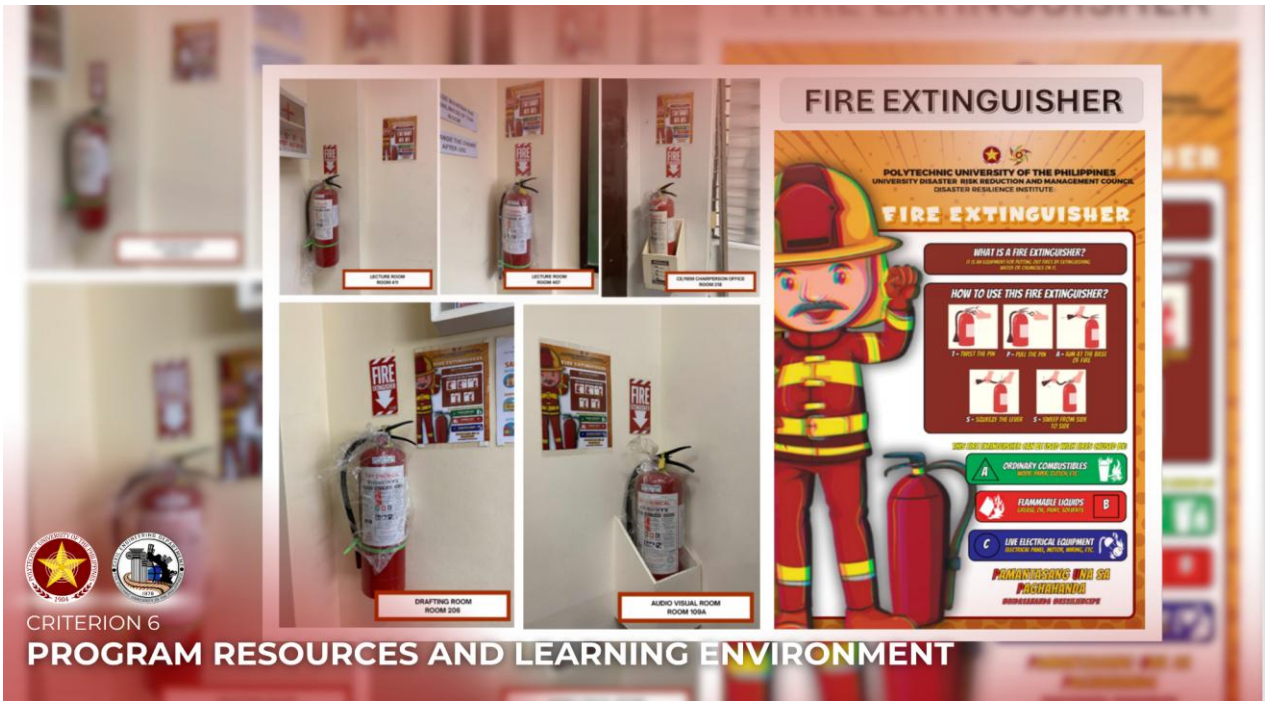


Figure 6.117 *Fire safety measures in place across Civil Engineering facilities. Fire extinguishers are installed in all laboratories, rooms, and key areas, accompanied by instructional posters on proper usage to promote safety awareness, preparedness, and compliance with fire protection standards.*

Calibration and Repair of Equipment

All calibration records of laboratory equipment and apparatus are systematically compiled and maintained in a secure database or physical logbook to ensure proper documentation, traceability, and reference. Calibration is undertaken either in-house, using established reference standards, or through authorized external service providers, depending on the type, nature, and complexity of the instrument. This process ensures that testing and measurement devices generate accurate, reliable, and consistent results, particularly in laboratories involving materials testing, fluid mechanics, and surveying, where precision is critical to obtaining valid experimental outcomes. Supporting documents such as the Calibration Plan, Calibration Certificates, Maintenance Log, and Budget Requests are maintained as part of this system (Attachment C6-30 - Calibration Certificates).

Moreover, third-party service providers and equipment suppliers of the department are also engaged to assess the condition and performance of laboratory equipment and apparatus, especially those requiring specialized inspection or technical servicing. Following their assessment, they provide recommendations for further repair, maintenance, upgrading, or enhancement to ensure the continued accuracy, safety, and usability of the equipment. These external evaluations strengthen the department's calibration and maintenance system and contribute to the sustained operational readiness of laboratory facilities (Attachment C6-31 - Technical Assessment of Equipment Repair).

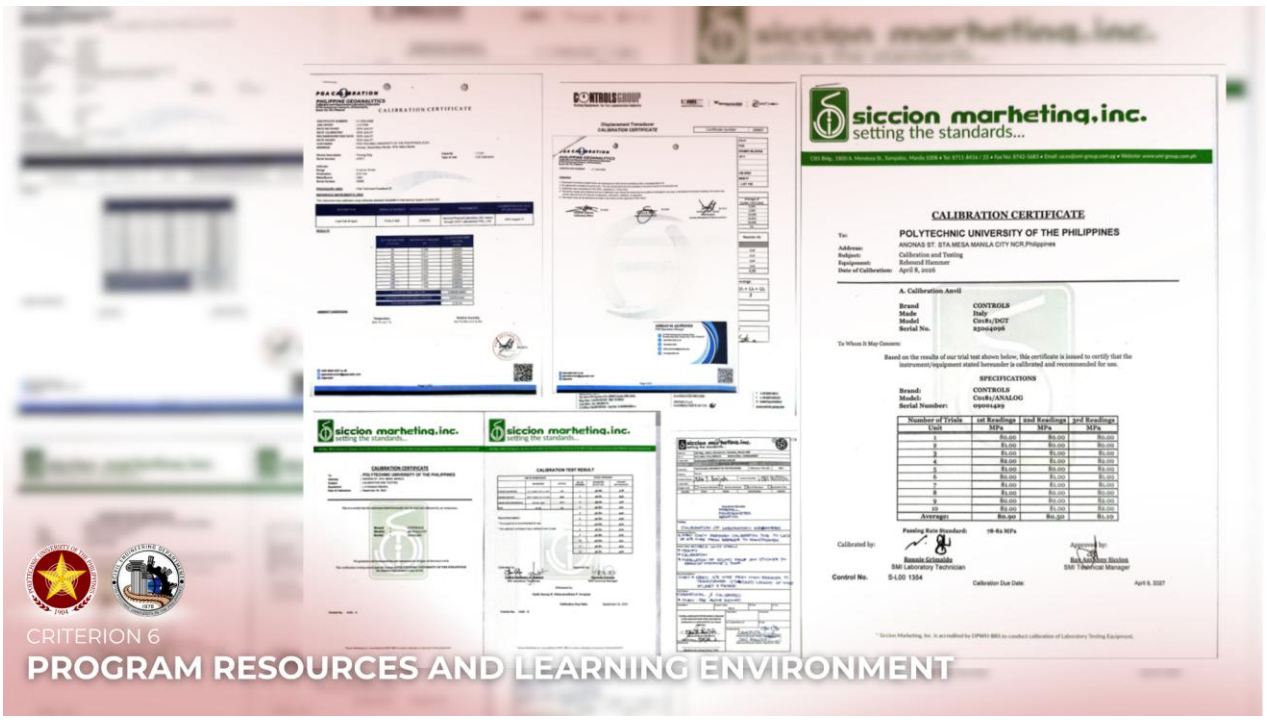


Figure 6.118 *Calibration Reports and Certificates. Official documents verifying the accuracy and reliability of laboratory equipment, supporting quality assurance, standard compliance, and precision in testing and experimentation.*

Figure 6.119 *Technical Assessment Report. A detailed evaluation document outlining the condition, performance, and recommended actions for laboratory equipment, supporting informed decision-making, maintenance planning, and quality assurance.*

In the event of equipment malfunction or damage, the department adheres to a repair and replacement protocol that includes immediate reporting, isolation of the defective item, and coordination with procurement or external service vendors for appropriate resolution. Additionally, inventory audits are conducted periodically to account for all apparatus, monitor wear and tear, and assess the need for equipment upgrades in response to technological advancements or curricular revisions. (Attachment C6-32 - Request for Corrective and Preventive Maintenance).

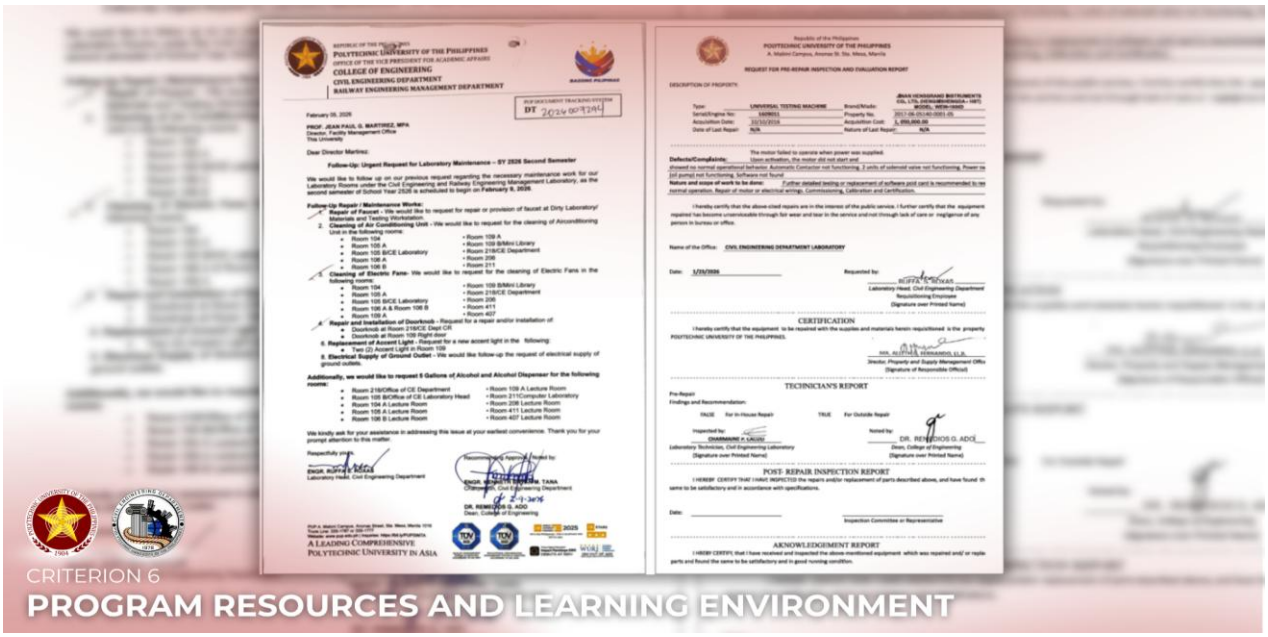


Figure 6.120 *Request For Repair. Presented are Samples of Request for Corrective and Preventive Maintenance addressed to FaMO dated February 2026 and Request for Pre-Repair Inspection and Evaluation Report for the Universal Testing Machine dated January 2026.*

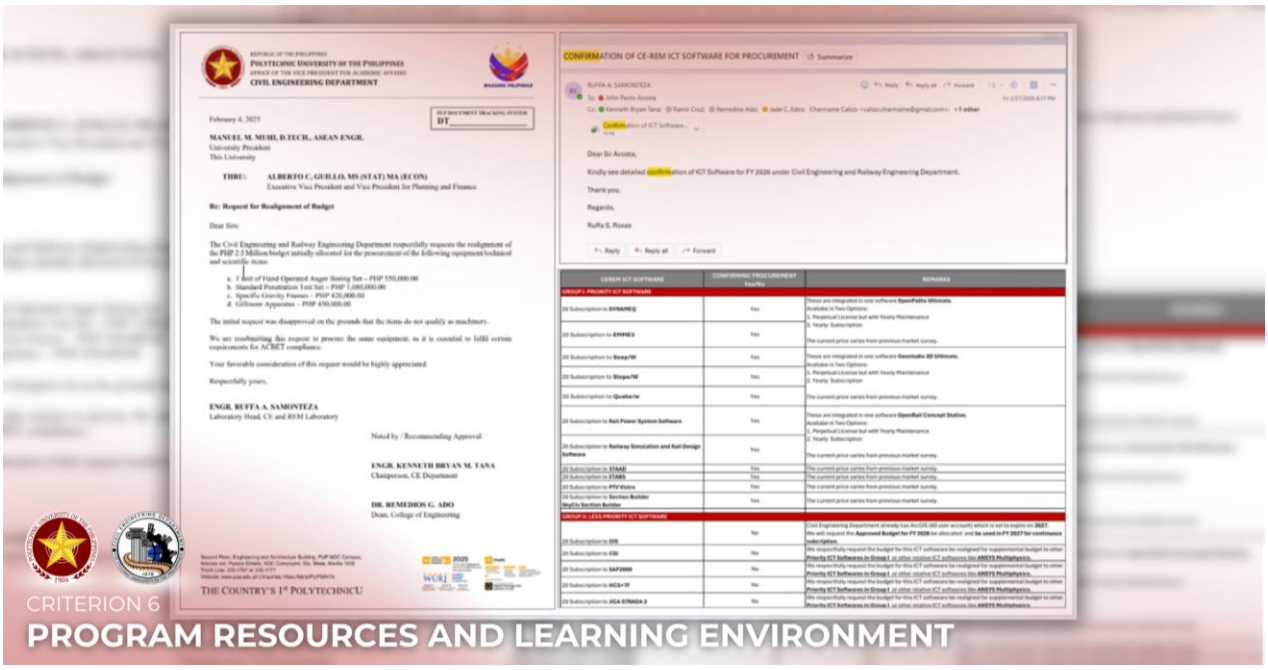
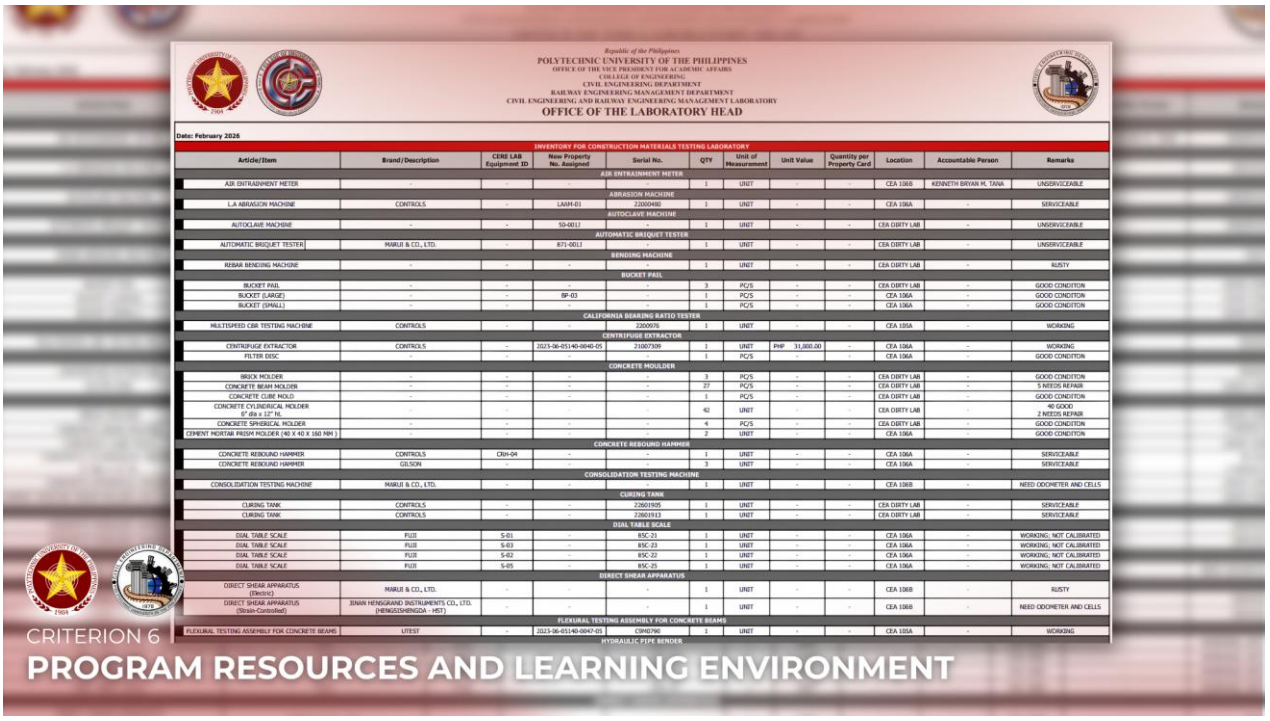


Figure 6.121 *Correspondence with ICTO regarding the confirmation of procurement requests for ICT software for use of Civil Engineering and Railway Engineering Management programs.*

Monitoring practices are further supported by faculty oversight, where instructors provide feedback on laboratory performance, equipment usage, and student safety during experiments. Observations are logged and reviewed by the laboratory management team for continuous improvement. Risk assessment measures, such as safety drills, first-aid readiness, and hazard identification procedures, are also integrated into laboratory operations to ensure compliance with environmental, health, and safety standards.

These maintenance practices are directly aligned with Student Outcome which requires that graduates be able to “conduct experiments, analyze and interpret data, and use engineering judgment to draw conclusions.” The availability of functional, calibrated, and well-maintained equipment allows students to meaningfully engage in experimentation, data collection, and analysis, thereby strengthening their research competence, technical skills, and professional readiness.

Through consistent application of these procedures and policies, the PUP Civil Engineering Department ensures that its laboratories remain responsive to academic demands, safe for use, and effective in supporting the University's commitment to quality engineering education (Attachment C6-33 - Inventory of BSCE Laboratory Equipment).



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CIVIL ENGINEERING AND RAILWAY ENGINEERING MANAGEMENT LABORATORY
OFFICE OF THE LABORATORY HEAD

Date: February 2026

INVENTORY FOR CONSTRUCTION MATERIALS TESTING LABORATORY

Article/Item	Brand/Description	CERE LAB Equipment ID	New Property No. Assigned	Serial No.	QTY	Unit of Measurement	Unit Value	Quantity per Property Card	Location	Accountable Person	Remarks
AIR ENTRAINMENT METER											
AIR ENTRAINMENT METER	-	-	-	-	1	UNIT	-	-	CEA 106B	KENNETH BRYAN M. TANA	UNSERVICEABLE
ABRASION MACHINE											
L.A ABRASION MACHINE	CONTROLS	-	LAAM-01	22000480	1	UNIT	-	-	CEA 106A	-	SERVICEABLE
AUTOCLAVE MACHINE											
AUTOCLAVE MACHINE	-	-	50-0011	-	1	UNIT	-	-	CEA DIRTY LAB	-	UNSERVICEABLE
AUTOMATIC BRIQUET TESTER											
AUTOMATIC BRIQUET TESTER	MARUI & CO., LTD.	-	871-0013	-	1	UNIT	-	-	CEA DIRTY LAB	-	UNSERVICEABLE
BENDING MACHINE											
REBAR BENDING MACHINE	-	-	-	-	1	UNIT	-	-	CEA DIRTY LAB	-	RUSTY
BUCKET PAIL											
BUCKET PAIL	-	-	-	-	3	PC/S	-	-	CEA DIRTY LAB	-	GOOD CONDITON
BUCKET (LARGE)	-	-	BP-03	-	1	PC/S	-	-	CEA 106A	-	GOOD CONDITON
BUCKET (SMALL)	-	-	-	-	1	PC/S	-	-	CEA 106A	-	GOOD CONDITON
CALIFORNIA BEARING RATIO TESTER											
MULTISPEED CBR TESTING MACHINE	CONTROLS	-	-	2200076	1	UNIT	-	-	CEA 105A	-	WORKING
CENTRIFUGE EXTRACTOR											
CENTRIFUGE EXTRACTOR	CONTROLS	-	2023-06-05140-0040-05	21007309	1	UNIT	PHP 31,000.00	-	CEA 106A	-	WORKING
FILTER DISC	-	-	-	-	1	PC/S	-	-	CEA 106A	-	GOOD CONDITON
CONCRETE MOULDER											
BRICK MOLDER	-	-	-	-	3	PC/S	-	-	CEA DIRTY LAB	-	GOOD CONDITON
CONCRETE BEAM MOLDER	-	-	-	-	27	PC/S	-	-	CEA DIRTY LAB	-	5 NEEDS REPAIR
CONCRETE CUBE MOLD	-	-	-	-	1	PC/S	-	-	CEA DIRTY LAB	-	GOOD CONDITON
CONCRETE CYLINDRICAL MOLDER 8" dia x 12" ht.		-	-	-	42	UNIT	-	-	CEA DIRTY LAB	-	40 GOOD 2 NEEDS REPAIR
CONCRETE SPHERICAL MOLDER	-	-	-	-	4	PC/S	-	-	CEA DIRTY LAB	-	GOOD CONDITON
CEMENT MORTAR PRISM MOLDER (40 X 40 X 160 MM)	-	-	-	-	2	UNIT	-	-	CEA 106A	-	GOOD CONDITON
CONCRETE REBOUND HAMMER											
CONCRETE REBOUND HAMMER	CONTROLS	CRH-04	-	-	1	UNIT	-	-	CEA 106A	-	SERVICEABLE
CONCRETE REBOUND HAMMER	GILSON	-	-	-	3	UNIT	-	-	CEA 106A	-	SERVICEABLE
CONSOLIDATION TESTING MACHINE											
CONSOLIDATION TESTING MACHINE	MARUI & CO., LTD.	-	-	-	1	UNIT	-	-	CEA 106B	-	NEED DOCMETER AND CELLS
CURING TANK											
CURING TANK	CONTROLS	-	-	22601905	1	UNIT	-	-	CEA DIRTY LAB	-	SERVICEABLE
CURING TANK	CONTROLS	-	-	22601913	1	UNIT	-	-	CEA DIRTY LAB	-	SERVICEABLE
DIAL TABLE SCALE											
DIAL TABLE SCALE	FUJI	S-01	-	85C-21	1	UNIT	-	-	CEA 106A	-	WORKING; NOT CALIBRATED
DIAL TABLE SCALE	FUJI	S-03	-	85C-23	1	UNIT	-	-	CEA 106A	-	WORKING; NOT CALIBRATED
DIAL TABLE SCALE	FUJI	S-02	-	85C-22	1	UNIT	-	-	CEA 106A	-	WORKING; NOT CALIBRATED
DIAL TABLE SCALE	FUJI	S-05	-	85C-25	1	UNIT	-	-	CEA 106A	-	WORKING; NOT CALIBRATED
DIRECT SHEAR APPARATUS											
DIRECT SHEAR APPARATUS (Dial)(Kit)	MARUI & CO., LTD.	-	-	-	1	UNIT	-	-	CEA 106B	-	RUSTY
DIRECT SHEAR APPARATUS (Strain-Controlled)	JINAN HENGGRAND INSTRUMENTS CO., LTD. (HENGSISHENGDA - HST)	-	-	-	1	UNIT	-	-	CEA 106B	-	NEED DOCMETER AND CELLS
FLEXURAL TESTING ASSEMBLY FOR CONCRETE BEAMS											
FLEXURAL TESTING ASSEMBLY FOR CONCRETE BEAMS	UTEST	-	2023-06-05140-0047-05	C9MD790	1	UNIT	-	-	CEA 105A	-	WORKING
HYDRAULIC PIPE BENDER											

CRITERION 6
PROGRAM RESOURCES AND LEARNING ENVIRONMENT

Figure 6.122 *Inventory of Equipment and Tools per Laboratory. A comprehensive record of laboratory equipment and tools, detailing specifications, condition, and location to support proper monitoring, maintenance, and efficient utilization of resources.*

UPGRADING OF FACILITIES

The program implements a systematic and needs-based approach to upgrading its facilities, tools, and computing resources to ensure alignment with current industry standards and student outcomes. Recent upgrading initiatives include the completion of a *PUP CEA Structured Network Cabling Project* that provides reliable internet connectivity throughout the CEA Building, including the Gabriela Silang Building, significantly enhancing access to digital learning resources and supporting technology-driven instruction.

In addition, the program has invested in the acquisition of new *laboratory equipment, computers*, and *updated ICT software*, ensuring that students are trained using relevant and up-to-date technologies. To further improve the learning environment, several rooms and laboratories have undergone renovation, including the installation of *new air conditioning units* (ACUs) and improvements in ventilation systems to promote comfort, safety, and productivity.

These upgrading efforts are regularly *evaluated and prioritized based on academic needs*, technological advancements, and *feedback from stakeholders*, thereby ensuring that facilities continuously support effective teaching, learning, and the attainment of program student outcomes.

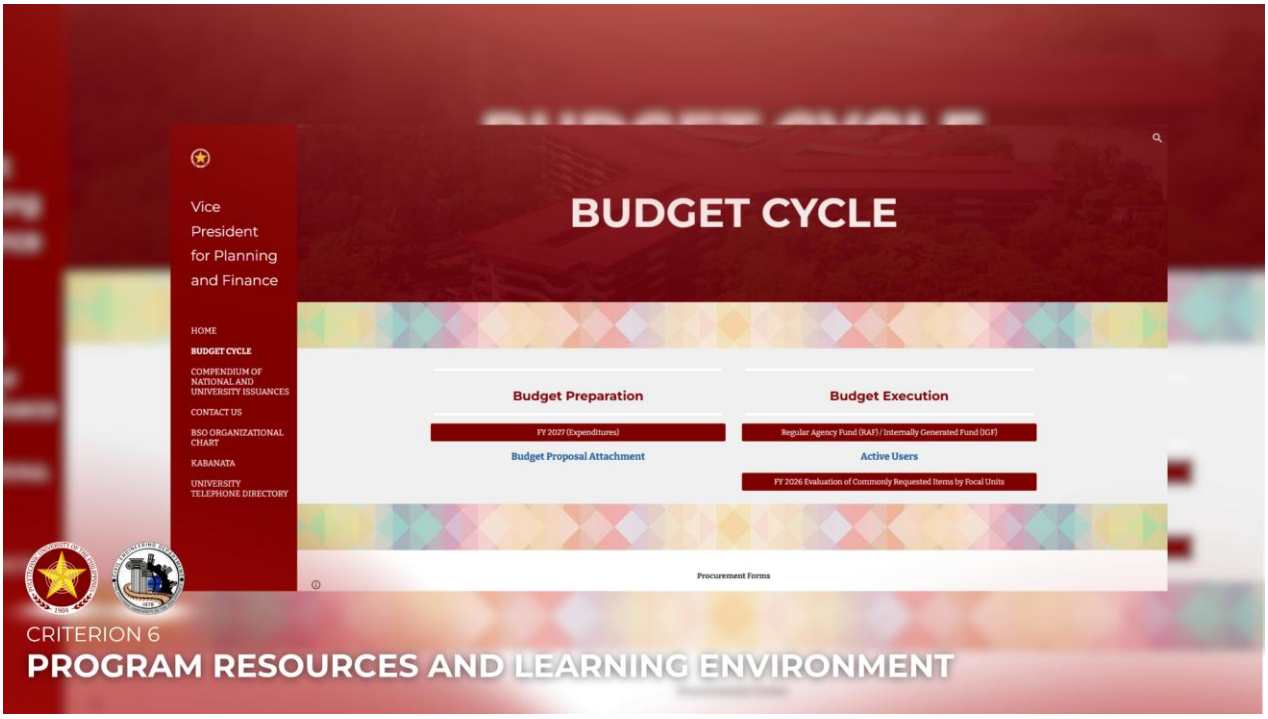

Figure 6.123 *BSO Dashboard (Budget Services Office): Digital platform used for the preparation, submission, and monitoring of budget proposals and procurement plans, supporting the university's budget cycle and project implementation.*

The program ***actively participates in university budgeting and procurement processes*** to ensure that upgrading initiatives are properly planned, justified, and implemented. Designated laboratory personnel are involved in the preparation and submission of project proposals through the **BSO Dashboard**, where i*dentified needs for equipment, facilities, and ICT resources are encoded and aligned with program priorities*. These proposals form part of the university's planning and are consolidated in the preparation of the Annual Procurement Plan (APP) of PUP.

Through this structured process, the program ensures that all ***upgrading requirements are systematically reviewed, prioritized, and supported with appropriate funding,*** enabling timely execution of projects and continuous improvement of facilities in support of teaching, learning, and student outcomes (Attachment C6-34 - Historical Summary of Requested and Procured Physical Resources).

These upgrading initiatives are closely aligned with the attainment of Student Outcomes (SO), particularly those related to the application of modern tools, problem-solving, experimentation, and effective communication. For instance, *improved internet connectivity* through the network cabling project enhances *students' ability to access digital resources, conduct research, and utilize online platforms, thereby supporting outcomes related to lifelong learning and the use of modern engineering tools*. Similarly, the *acquisition of updated equipment and ICT software* enables students to perform

laboratory activities and simulations that strengthen technical competencies, while improved ventilation and learning environments contribute to better concentration, safety, and overall academic performance.

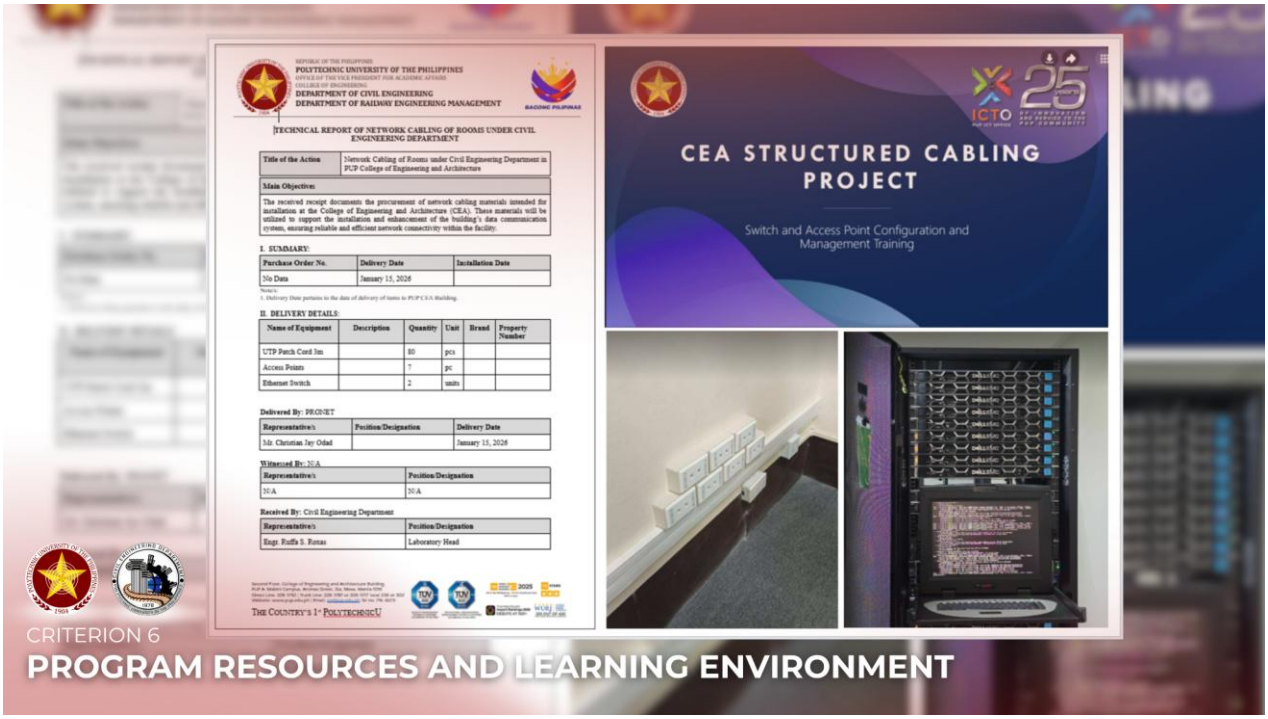

Figure 6.124 *Technical Reports on PUP CEA Structured Network Cabling Project*

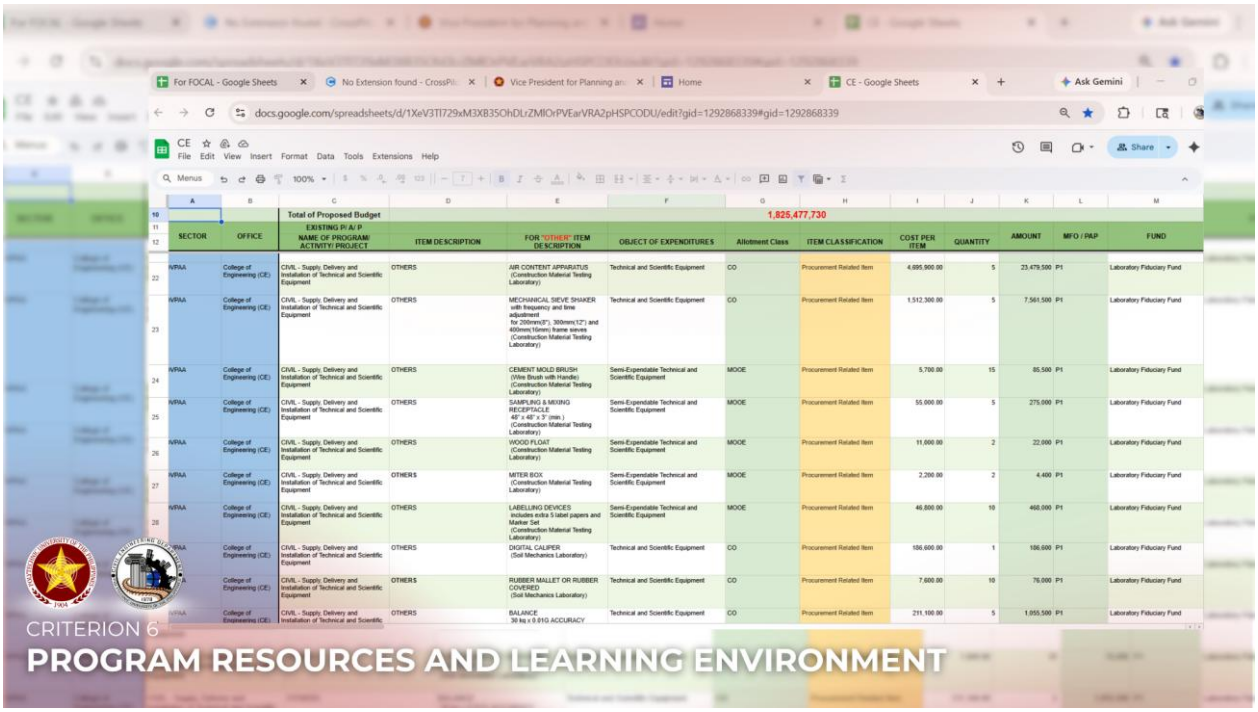

Figure 6.125 *Encoding of Project Proposal (PRE 2027): Screenshot of the BSO Dashboard showing the detailed encoding and consolidation of project proposals for Fiscal Year 2027(i.e. Procurement of Equipment and ICT Software), supporting the preparation of the Annual Procurement Plan (APP).*

REPUBLIC OF THE PHILIPPINES
POLYTECHNIC UNIVERSITY OF THE PHILIPPINES
OFFICE OF THE VICE PRESIDENT FOR ACADEMIC AFFAIRS
COLLEGE OF ENGINEERING
DEPARTMENT OF CIVIL ENGINEERING
DEPARTMENT OF RAILWAY ENGINEERING MANAGEMENT

TECHNICAL REPORT OF DELIVERY AND INSTALLATION OF LABORATORY EQUIPMENTS

Title of the Action	Delivery and Installation of Technical and Scientific Equipments
Main Objective:	
The main objective of this activity is to ensure the proper delivery, installation, and setup of equipment in the Civil Engineering Laboratory in order to support effective instruction, accurate testing, and safe laboratory operations.	

I. SUMMARY:

Purchase Order No.	Delivery Date	Installation Date
B-24-10-0037-A	February 4, 2026	February 9, 2026

Note/s:
1. Delivery Date pertains to the date of delivery to PUP CEA Building.

II. DELIVERY DETAILS:

Name of Equipment	Description	Quantity	Unit	Brand	Property Number
1. Falling Head Permeability Test Set	* Φ 100 mm Falling Head Permeability Cell * Wooden frame with 3 manometer tubes * Soaking Reservoir Tank * Graduated Glass Cylinder 250 ml * 3m plastic tube (6Omm OD)	1	set	UTEST	Not yet assigned
2. Constant Head Test Set	* Constant Head Permeability Cell, ASTM 76 mm (3.0") dia. with metal body * Constant-Head Filter Tank, 4L. (Supplied without sand) * Sliding Tamper, ASTM, for Constant Head Permeability Test * Wall type metal	1	set	UTEST	Not yet assigned

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POLYTECHNIC UNIVERSITY OF THE PHILIPPINES
OFFICE OF THE VICE PRESIDENT FOR ACADEMIC AFFAIRS
COLLEGE OF ENGINEERING
DEPARTMENT OF CIVIL ENGINEERING
DEPARTMENT OF RAILWAY ENGINEERING MANAGEMENT

TECHNICAL REPORT OF NETWORK CABLING OF ROOMS UNDER CIVIL ENGINEERING DEPARTMENT

Title of the Action	Network Cabling of Rooms under Civil Engineering Department in PUP College of Engineering and Architecture
Main Objective:	
The received receipt documents the procurement of network cabling materials intended for installation at the College of Engineering and Architecture (CEA). These materials will be utilized to support the installation and enhancement of the building's data communication system, ensuring reliable and efficient network connectivity within the facility.	

I. SUMMARY:

Purchase Order No.	Delivery Date	Installation Date
No Data	January 15, 2026	

Note/s:
1. Delivery Date pertains to the date of delivery of items to PUP CEA Building.

II. DELIVERY DETAILS:

Name of Equipment	Description	Quantity	Unit	Brand	Property Number
UTP Patch Cord 3m		80	pcs		
Access Points		7	pc		
Ethernet Switch		2	units		

Delivered By: PROJECT

Representative/s	Position/Designation	Delivery Date
Mr. Christian Jay Odad		January 15, 2026

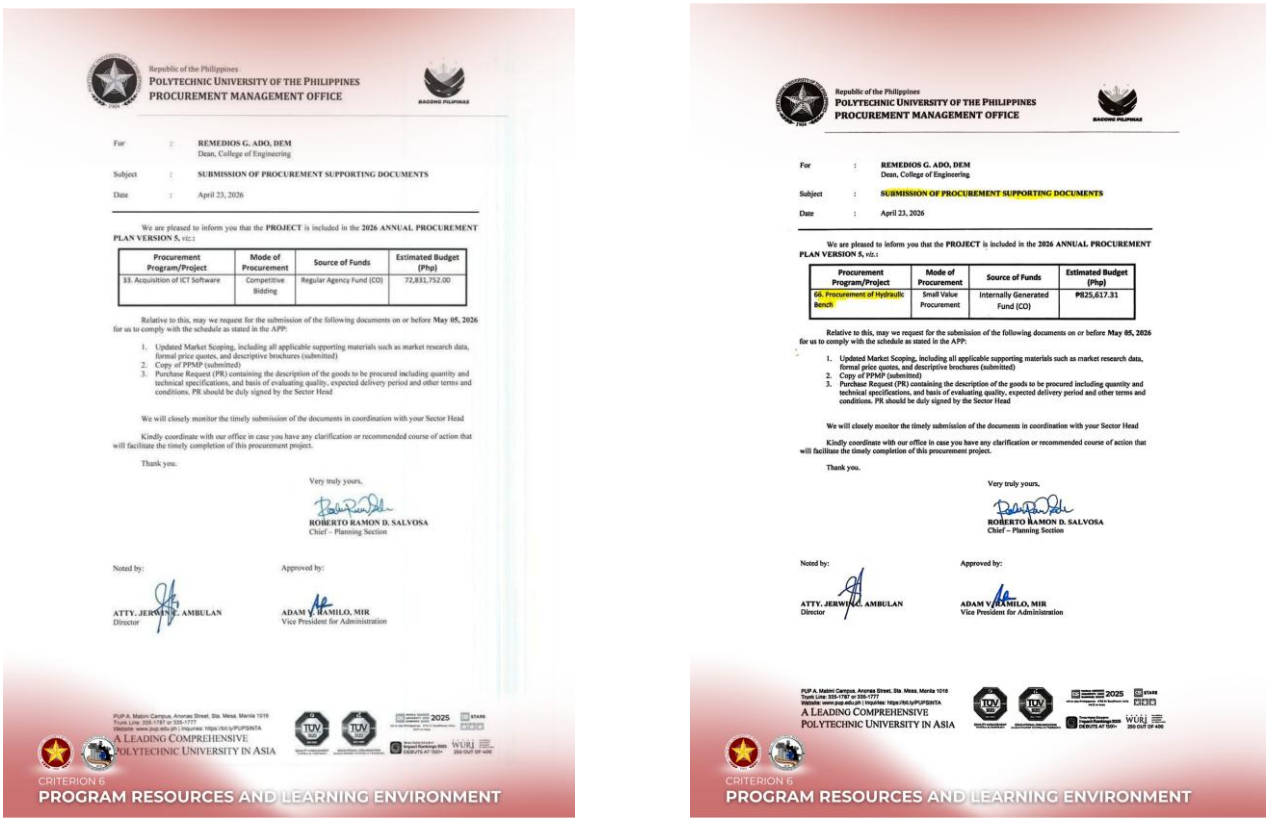
Witnessed By: N/A

Representative/s	Position/Designation
N/A	N/A

Received By: Civil Engineering Department

Representative/s	Position/Designation
Engr. Ruffa S. Renas	Laboratory Head

Figure 6.126 *Sample Technical Reports on Facility-Related and Equipment-Related Development in the Civil Engineering Department like PUP CEA Network Cabling Project and Delivery and Installation of Newly Acquired Laboratory Equipment (Balance, Permeability Apparatus- Constant Head and Falling Head, Theodolite, etc.)*



Republic of the Philippines
POLYTECHNIC UNIVERSITY OF THE PHILIPPINES
PROCUREMENT MANAGEMENT OFFICE

For : REMEDIOS G. ADO, DEM
Dean, College of Engineering

Subject : SUBMISSION OF PROCUREMENT SUPPORTING DOCUMENTS

Date : April 23, 2026

We are pleased to inform you that the **PROJECT** is included in the **2026 ANNUAL PROCUREMENT PLAN VERSION 5**, viz.:

Procurement Program/Project	Mode of Procurement	Source of Funds	Estimated Budget (Php)
33. Acquisition of ICT Software	Competitive Bidding	Regular Agency Fund (CO)	72,831,752.00

Relative to this, may we request for the submission of the following documents on or before **May 05, 2026** for us to comply with the schedule as stated in the APP:

1. Updated Market Scoping, including all applicable supporting materials such as market research data, formal price quotes, and descriptive brochures (submitted)
2. Copy of PPMP (submitted)
3. Purchase Request (PR) containing the description of the goods to be procured including quantity and technical specifications, and basis of evaluating quality, expected delivery period and other terms and conditions. PR should be duly signed by the Sector Head

We will closely monitor the timely submission of the documents in coordination with your Sector Head

Kindly coordinate with our office in case you have any clarification or recommended course of action that will facilitate the timely completion of this procurement project.

Thank you.

Very truly yours,

ROBERTO RAMON D. SALVOSA
Chief – Planning Section

Noted by:

ATTY. JERWIN C. AMBULAN
Director

Approved by:

ADAM V. RAMILO, MIR
Vice President for Administration

PUP A. Mabini Campus, Anonas Street, Sta. Mesa, Manila 1016
Trunk Line: 335-1787 or 335-1777
Website: www.pup.edu.ph | Hashtag: https://bit.ly/PUPSINTA
A LEADING COMPREHENSIVE POLYTECHNIC UNIVERSITY IN ASIA

Republic of the Philippines
POLYTECHNIC UNIVERSITY OF THE PHILIPPINES
PROCUREMENT MANAGEMENT OFFICE

For : REMEDIOS G. ADO, DEM
Dean, College of Engineering

Subject : SUBMISSION OF PROCUREMENT SUPPORTING DOCUMENTS

Date : April 23, 2026

We are pleased to inform you that the **PROJECT** is included in the **2026 ANNUAL PROCUREMENT PLAN VERSION 5**, viz.:

Procurement Program/Project	Mode of Procurement	Source of Funds	Estimated Budget (Php)
60. Procurement of Hydraulic Bench	Small Value Procurement	Internally Generated Fund (CO)	₱825,617.31

Relative to this, may we request for the submission of the following documents on or before **May 05, 2026** for us to comply with the schedule as stated in the APP:

1. Updated Market Scoping, including all applicable supporting materials such as market research data, formal price quotes, and descriptive brochures (submitted)
2. Copy of PPMP (submitted)
3. Purchase Request (PR) containing the description of the goods to be procured including quantity and technical specifications, and basis of evaluating quality, expected delivery period and other terms and conditions. PR should be duly signed by the Sector Head

We will closely monitor the timely submission of the documents in coordination with your Sector Head

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Figure 6.127 *Call for Submission of Procurement Documents: Official memorandum requesting the submission of supporting documents for the approved procurement of ICT software and hydraulic bench, in line with the Annual Procurement Plan (APP) implementation*.

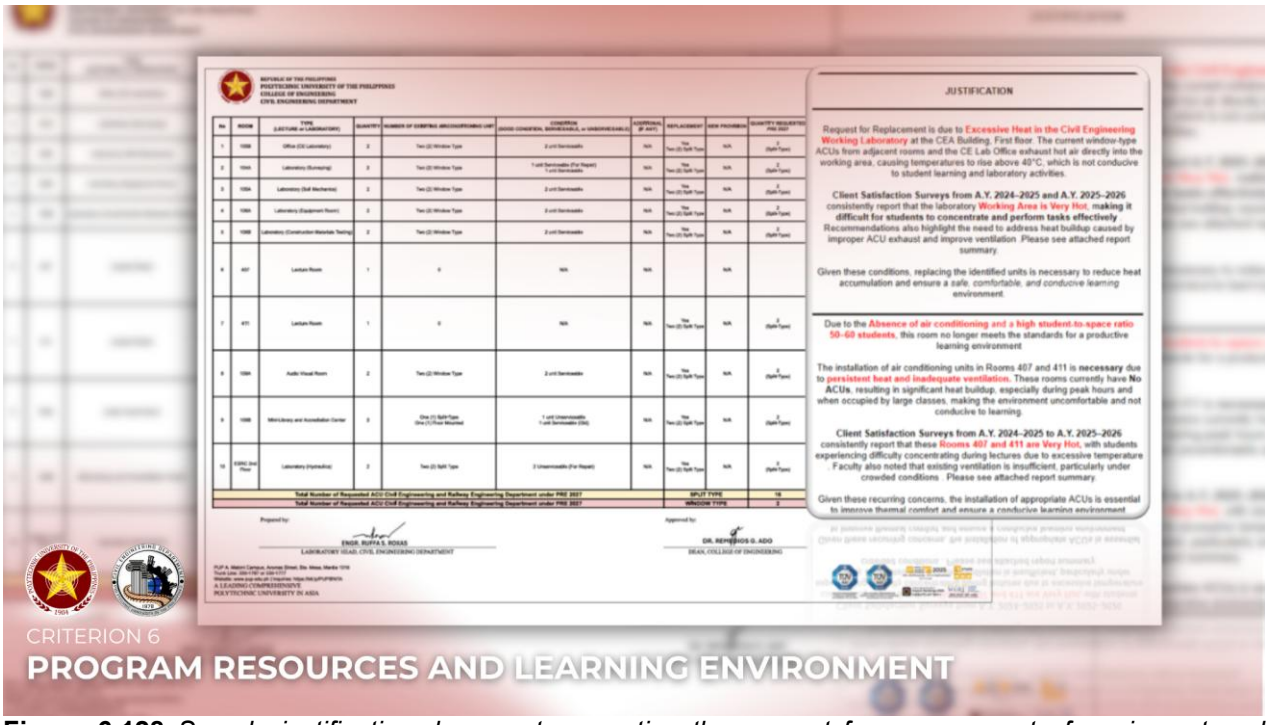


Figure 6.128 *Sample justification document supporting the request for procurement of equipment and facilities. The justification is prepared based on current facility needs, operational requirements, and results of Client Satisfaction Surveys to support data-driven planning and improvement of learning environments and laboratory services.*

E. LIBRARY SERVICES

Describe and evaluate the capability of the library (or libraries) to serve the program including the adequacy of the library's technical collection relative to the needs of the program and the faculty, the adequacy of the process by which faculty may request the library to order books or subscriptions, the library's systems for locating and obtaining electronic information, and any other library services relevant to the needs of the program. Describe opportunities that will support self-study and research including open educational resources. Define relevant student outcomes which are highly affected by library service and provide performance data

The Polytechnic University of the Philippines (PUP) University Library, headed by the Office of the University Library Director, possesses the resources both in print and online, facilities, services, and technological infrastructure necessary to effectively support the instructional, research, extension, and professional development requirements of the Bachelor of Science in Civil Engineering (BSCE) program. The University Library provides students and faculty with access to current and relevant information resources that support the attainment of program educational objectives and student outcomes.

There are Seven Satellite Libraries which are also a part of the Main library, namely — the College of Law Library (NALLRC Ground floor), Laboratory High School Library (NALLRC, third floor, left wing), College of Communication Library (2nd Floor COC Building), **College of Engineering and Architecture Library** (4th Floor, CEA Building), Institute of Technology Library (4th Floor iTech Building), College of Hospitality and Transportation

Management Library (2nd floor, Hasmin Hostel), and Graduate School Library (Ground floor, GS Building M.H. Del Pilar campus).

The Main Library, located on the third floor of the Ninoy Aquino Library and Learning Resource Center, it houses more than 68,000 volumes of books, and other resources such as journals and unpublished materials. The library is open Monday to Friday from 8:00 AM to 8:00 PM and Saturday from 8:00 AM to 5:00 PM, providing students and faculty ample opportunity for study, research, and information access.

Table 6.34 *PUP University Library Collection.*

SUMMARY OF UNIVERSITY LIBRARY BOOK COLLECTION FOR BSCE PROGRAM March 2026		
Title	Volume	Copyright within the last 5 years (2021-2025)
171	245	30

The PUP University Library demonstrates a strong capability to support the Bachelor of Science in Civil Engineering (BSCE) program through its extensive physical and digital collections, specialized engineering resources, and technology-enabled information services. As of March 2026, the University Library maintains a collection of 26,171 titles and 68,424 volumes, with 11,687 resources published within the last five years and 23,646 published within the last ten years, ensuring the availability of current and relevant references for instruction and research. The Technology collection alone comprises 722 titles and 19,384 volumes, providing substantial support for engineering disciplines (Attachment C6-35 - Library Resources Supporting the BS Civil Engineering Program).

The adequacy of the library's technical collection is evidenced by the dedicated BSCE curriculum-based holdings that cover major areas of civil engineering, including civil engineering orientation, hydraulics, engineering materials, surveying, quantity surveying, engineering mechanics, statics of rigid bodies, computer-aided drafting, engineering economics, engineering management, and engineering utilities.

The BSCE collection consists of 171 titles and 245 volumes, including recently acquired references published from 2021 to 2025 that support both undergraduate instruction and faculty research. Resources such as *Civil Engineer's Handbook of Professional Practice*, *Hydraulics in Civil and Environmental Engineering*, *Structural Reliability in Civil*

Engineering, *Autodesk Civil 3D*, *Engineering Mechanics*, and *Fundamentals of Engineering Economics and Decision Analysis* demonstrate the library's commitment to providing updated and discipline-specific materials aligned with the BSCE curriculum and the professional development needs of faculty members.

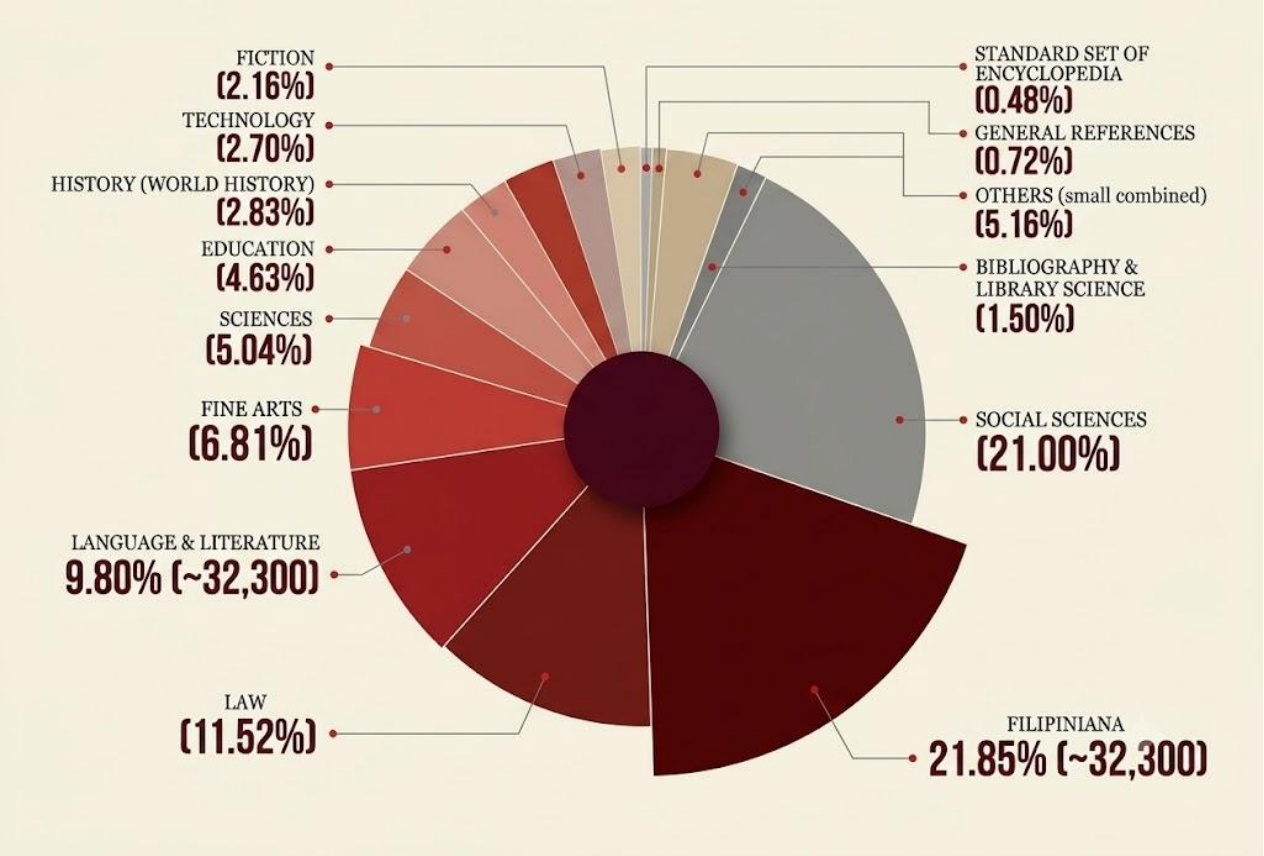


Figure 6.129 *Graphical Presentation of Library Collection*

In addition to print resources, the library provides access to electronic books, electronic journals, multimedia resources, and specialized databases that support undergraduate and graduate research.

Electronic Resources and Databases

The University Library provides access to a wide range of scholarly databases and digital resources, including:

Table 6.35 *Available Electronic Resources from the University Library*

ELECTRONIC RESOURCES AND DATABASES	PARTICULARS
Subscription Databases	• Emerald Insight • Gale Databases • ProQuest E-Books and E-Journals • IG Library • PressReader

	• JoVE (Journal of Visualized Experiments) • Project MUSE
Open Access and Complementary Resources	• ERIC • Philippine E-Journals • PHL CHED Connect • DOST STARBOOKS • Springer Open Access • Socioeconomic Research Portal for the Philippines • Bibliotext E-Books • Gadgets Magazine • HRM Asia
Institutional Publications and Repositories	• PUP Journal of Science and Technology • Education Review • Social Science and Development Review Journal • Graduate Forum • The Mabini Review • Bisig • Entrada • Sudlanan (Philippine Studies Repository)

These resources ensure that students and faculty have access to current scholarly literature, peer-reviewed journals, evidence-based research, and discipline-specific information needed for instruction, research, innovation, and publication.

The library's collection supports course delivery, capstone projects, thesis writing, research activities, outcomes-based education, and accreditation requirements.

Faculty Participation in Collection Development

The University Library, under the leadership of the University Library Director, maintains a systematic and collaborative process for the acquisition of learning resources to ensure that library holdings remain responsive to academic and research needs. Requests for books, journals, and other instructional materials are coordinated through the designated Program Chairperson or Library Focal Person, who regularly consults with faculty members regarding their resource requirements. Faculty recommendations are consolidated and endorsed by the Chairperson before submission to the University Library for evaluation and procurement. This participatory process ensures that library acquisitions are aligned with curricular requirements, emerging developments in the discipline, faculty research interests, and accreditation standards, thereby maintaining the adequacy and relevance of the library collection in support of the BSCE program.

Evaluation of the Acquisition Process

The acquisition process is adequate because it:

- Encourages faculty participation.
- Aligns acquisitions with curricular needs.
- Supports emerging areas of specialization.
- Provides mechanisms for updating outdated resources.
- Ensures efficient utilization of library funds.

Systems for Locating and Obtaining Electronic Information

The University Library employs multiple systems that facilitate efficient discovery, retrieval, and utilization of information resources. This includes the:

1. Online Public Access Catalog
2. Electronic Resource Access through
    - Library website portals
    - Institutional subscriptions
    - CHED Philippine e-Lib Project
    - DOST STARBOOKS
    - Open-access repositories
    - Online journal systems
3. E-Learning Center and Internet Services providing Internet connectivity, online research support, access to digital learning resources and electronic database access
4. Virtual Reference Services

Evaluation of Electronic Information Systems

The electronic information systems are adequate because they:

- Provide 24/7 access to many digital resources.
- Support remote learning and research.
- Facilitate efficient information retrieval.
- Promote information literacy.
- Enhance access to scholarly communication platforms.

Opportunities Supporting Self-Study, Research, and Open Educational Resources

The University Library creates an environment that promotes self-directed learning, independent inquiry, and scholarly research through:

- **Self-Study Opportunities:** Extended library hours, Quiet study areas, Discussion rooms, Access to print and digital collections, Remote access to electronic resources
- **Research Opportunities:** Access to scholarly databases, Institutional journals, Research repositories, Theses and dissertations, technical reports, Virtual research consultations
- **Open Educational Resources:** Access to CHED Connect, ERIC, Springer Open Access, Philippine E-Journals, DOST STARBOOKS and Open repositories and institutional publications

Performance data indicates that a large proportion of Civil Engineering students regularly use library services. Furthermore, faculty members have consistently expressed satisfaction with the responsiveness and adequacy of library support in meeting academic requirements. In this context, the NALLRC remains a vital component of the University's academic infrastructure, enabling student success and strengthening the research and instructional capabilities of the Civil Engineering program.

Table 6.36 *Utilization of University Library Facilities.*

SUMMARY OF UTILIZATION OF LIBRARY FACILITIES College of Engineering Year 2023- 2025				
UTILIZATION SUMMARY	YEAR			TOTAL Year 2023-2025
	2023	2024	2025	
Library Facilities	8,495	11,667	9,953	27,352
Library Materials	1,187	690	867	2,744

The University Library supports the attainment of all BSCE Student Outcomes by providing access to relevant information resources and research services, with particularly significant contributions to SO 2, SO 5, SO 7, SO 9, and SO 11 through the development of students' research, information literacy, communication, lifelong learning, and technical resource utilization competencies.

Table 6.37 *Contribution of Library Resources to Student Outcomes*.

STUDENT OUTCOMES	LIBRARY CONTIBUTION	PERFORMNCE DATA	REMARKS
SO 2 Conduct investigations of complex civil engineering problems using research-based knowledge and research methods including design of experiments, analysis, and interpretation of data, and synthesis of information to provide valid conclusions.	Access to journals, theses, databases, and research assistance	Research Methods Capstone Project	Refer to Criterion 9
SO 5 Identify, formulate, research literature, and analyze complex civil engineering problems, reaching substantiated conclusions using first principles of mathematics, natural sciences and engineering sciences.	Literature search, engineering references, standards, and technical publications	Literature Review Research proposal	Refer to Criterion 9
SO 7 Communicate effectively on complex civil engineering activities with the engineering community and with society at large, such as being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.	Access to scholarly sources and citation support	Technical report Thesis/Capstone documentation	Refer to Criterion 9
SO 9 Recognize the need for and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.	Self-directed access to print and digital resources	Library utilization rates Database access statistics Student satisfaction	Refer to Criterion 9
SO11 Create, select and apply appropriate techniques, skills, resources, and modern engineering and IT tools, including prediction and modelling, to complex civil engineering problems with an understanding of the limitations.	Access to e-resources, online databases, OPAC, and digital platforms	e-resources usage statistics	Refer to Criterion 9

Table 6.38 *List of Available Physical Facilities of Library*

PUP MAIN UNIVERSITY LIBRARY			
Library Name	**Location**	**Size (m^2)**	**Seating Capacity**
3/F, NALLRC Building, Mabini Campus	Left Wing (E-Learning, Circulation Section, and Reference Section	334.8	250
	Right wing (Filipiniana Section, Special Collections Section, Disability Corner, Gender and Development (GAD) Corner and Serials Section	334.8	300
	Center Wing (Director's Office, Technical Services, Rare Books, Silid Lakandayang, Spiritual Room, Archives Room, Pantry, Discussion Room, President's Memorabilia Hall	334.8	122
4/F, NALLRC Building, Mabini Campus	Multimedia Room	65	100
		TOTAL	**762**
OTHER UNIVERSITY LIBRARY			
Library Name	**Location**	**Size (m^2)**	**Seating Capacity**
Graduate School Library	Ground Floor, GS Building, M. H. Del Pilar campus, Valencia St., Sta Mesa, Manila	262.2	70
Hasmin Library	2nd Floor, Hasmin Building, M. H. Del Pilar campus, Valencia St., Sta Mesa, Manila	75.3	50
College of Engineering and Architecture Library	4th Floor, CEA Building, NDCC Compound, Anonas St., Sta Mesa, Manila	85.6	50
College of Communication Library	2nd Floor, COC Building, NDCC Compound, Anonas St., Sta Mesa, Manila	147.6	80
College of Law Library	Ground Floor, NALLRC Building, Mabini Campus	175	130
Institute of Technology Library	4th floor, College of Technology Building, Pureza St., Sta. Mesa	60	60

Laboratory High School Library	G/F, LHS Building, Anonas St., Sta Mesa, Manila	150	60
		TOTAL	**500**

F. OVERALL COMMENTS ON FACILITIES AND CONCLUSION

Describe how the program ensures that the facilities, tools, and equipment used in the program are safe for their intended purposes. Provide list of applicable documents. Define performance indicator for safety and provide data

The offices, classrooms, and laboratories of the Polytechnic University of the Philippines (PUP) are systematically maintained and continuously improved to ensure that they remain conducive to learning and effective in delivering the intended course outcomes of the Civil Engineering program. These facilities are not only equipped with appropriate instructional tools, instruments, and technology, but are also aligned with program requirements to support hands-on activities, technical skill development, and the attainment of targeted student outcomes.

To ensure that all facilities, tools, and equipment are safe for their intended purposes, the program implements strict protocols on equipment usage, storage, and maintenance. Laboratory facilities are manned by qualified personnel, including the Laboratory Head, laboratory technicians, and trained student assistants. These personnel are responsible for the regular inspection, calibration, and repair of equipment, and they provide orientation sessions to students and faculty on laboratory policies, safety guidelines, and proper use of apparatus before any laboratory activity is conducted.

The program adheres to environmental, health, and safety standards, including the use of personal protective equipment (PPE), clear laboratory signage, emergency exit plans, and the availability of first-aid kits and fire extinguishers. In addition, laboratory spaces are designed to allow safe circulation, ventilation, and spill containment where applicable. Safety audits are periodically conducted, and documented maintenance logs are reviewed to ensure ongoing compliance with institutional and regulatory standards.

By integrating safety into the physical and operational design of its resources, the program ensures not only the achievement of academic goals but also the well-being of its learners

and faculty, fostering a secure, functional, and learner-centered environment that supports quality engineering education.

The BS Civil Engineering program of the Polytechnic University of the Philippines ensures that the facilities, tools, and equipment used in instruction, laboratory work, and related academic activities are safe, functional, and appropriate for their intended purposes through a system of orientation, supervision, preventive maintenance, calibration, and documented monitoring. Before the conduct of laboratory and computer-based activities, students are given formal orientation by faculty members, laboratory technicians, and the Laboratory Head on laboratory rules, proper handling of tools and apparatus, the use of computing resources, emergency procedures, and required personal protective equipment (PPE). This is reinforced through posted safety signages and hazard warnings, course-specific laboratory manuals, and the Guidelines for the Use of Civil Engineering Laboratories, Equipment and Facilities of PUP, which collectively promote safe, orderly, and accountable use of facilities and resources.

Safety is further ensured through direct supervision and continuous monitoring. Each laboratory class is supervised by faculty members, supported by two laboratory technicians and student assistants who help monitor compliance with safety measures, proper equipment handling, cleanliness, and orderliness in the laboratory. The department also maintains routine checks on the condition and placement of safety notices, fire extinguishers, and first-aid kits, while equipment manuals and laboratory manuals are kept readily available for reference. These measures help establish a culture of safety, preparedness, and responsibility among students and faculty.

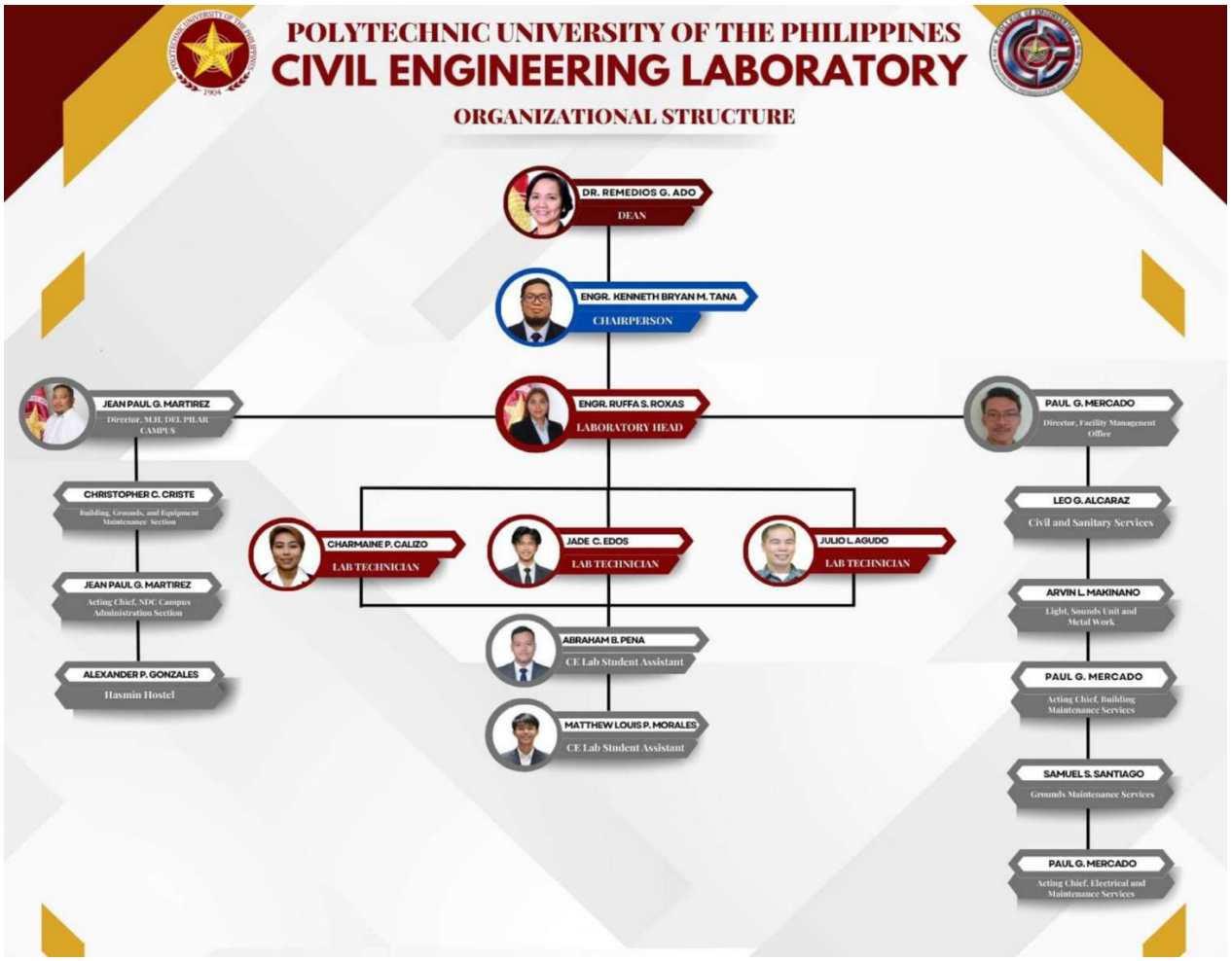


Figure 6.130 *Organizational Structure of the Civil Engineering Laboratory, Polytechnic University of the Philippines. The chart illustrates the hierarchy of leadership, technical staff, and student assistants supporting laboratory operations and management.*

To keep facilities and apparatus safe for use, the department implements documented maintenance and upgrading procedures. Facility Maintenance Logs show that corrective and preventive works were conducted, including repair of electrical outlets, air-conditioning units, faucets, lights, windows, and study tables; installation of exhaust fans, breakers, wall fans, and bulletin boards; welding and fabrication works; sewer line re-piping; and the replacement or provision of fire extinguishers. Equipment and apparatus used in soil mechanics, hydraulics, construction materials testing, and surveying are likewise covered by preventive maintenance activities such as scheduled cleaning, lubrication, recalibration, visual inspection, functionality checking, and inventory. When damage occurs during laboratory activities, incident reports are prepared by the laboratory technicians and student assistants and submitted to the Laboratory Head for proper action. Calibration records are systematically maintained, and external service providers or equipment suppliers are engaged when specialized assessment, repair, or enhancement is needed.

Through these practices, the program ensures that its facilities remain safe, reliable, and ready to support quality engineering instruction and experimentation.

The Laboratory Management, Planning and Operations System

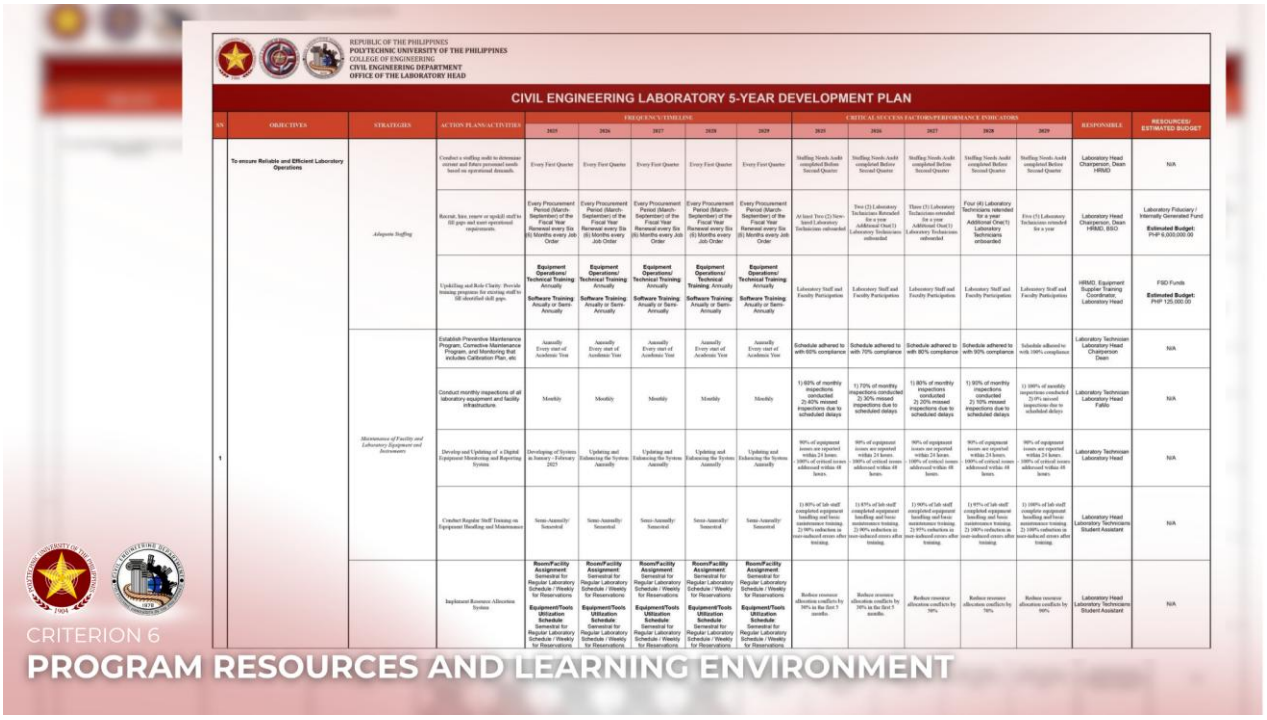
The Civil Engineering Department implements an organized laboratory management and operations system to ensure that facilities, equipment, and instructional resources remain safe, functional, and responsive to program outcomes. Laboratory operations are supervised by the Laboratory Head, with the support of designated personnel and student assistants following established institutional policies and operational procedures. The organizational structure of the laboratory ensures clear accountability, efficient coordination, and proper monitoring of laboratory activities.

The department adopts a systematic approach to laboratory planning through the implementation of a 5-Year Laboratory Development Plan, which guides the upgrading, acquisition, and maintenance of laboratory facilities and equipment. The plan supports continuous improvement, resource allocation, and alignment of laboratory services with instructional and research requirements.

To maintain operational readiness and safety, the department regularly conducts inventory, inspection, and monitoring of laboratory tools and equipment. Preventive and corrective maintenance programs are implemented to ensure equipment functionality, reliability, and compliance with safety standards. Maintenance activities, inspection records, and utilization documents are properly monitored and documented to support quality assurance and continuous improvement of laboratory services.

(See Attachment C6-36 - CE Laboratory 5-Year Development Plan (2025–2029))
(See Attachment C6-37 - CE Preventive and Corrective Maintenance Program)
(See Attachment C6-38 - Scanned Copy of Accomplished Laboratory Slips)
(See Attachment C6-39 – Laboratory Management Manual)

Figure 6.131 *The Laboratory Technician, together with our dedicated student assistants, conducts a thorough inventory and inspection of laboratory equipment to monitor condition, ensure operational efficiency, and maintain safety and functionality standards for reliable laboratory performance.*



REPUBLIC OF THE PHILIPPINES
POLYTECHNIC UNIVERSITY OF THE PHILIPPINES
COLLEGE OF ENGINEERING
CIVIL ENGINEERING DEPARTMENT
OFFICE OF THE LABORATORY HEAD

CIVIL ENGINEERING LABORATORY 5-YEAR DEVELOPMENT PLAN

SN	OBJECTIVES	STRATEGIES	ACTION PLANS/ACTIVITIES	FREQUENCY/TIMELINE					CRITICAL SUCCESS FACTORS/PERFORMANCE INDICATORS					RESPONSIBLE	RESOURCES/ ESTIMATED BUDGET
				2025	2026	2027	2028	2029	2025	2026	2027	2028	2029		
1	To ensure Reliable and Efficient Laboratory Operations	*Adequate Staffing*	Conduct a staffing audit to determine current and future personnel needs based on operational demands.	Every First Quarter	Every First Quarter	Every First Quarter	Every First Quarter	Every First Quarter	Staffing Needs Audit completed Before Second Quarter	Staffing Needs Audit completed Before Second Quarter	Staffing Needs Audit completed Before Second Quarter	Staffing Needs Audit completed Before Second Quarter	Staffing Needs Audit completed Before Second Quarter	Laboratory Head Chairperson, Dean HRMD	N/A
			Recruit, hire, renew or upskill staff to fill gaps and meet operational requirements.	Every Procurement Period (March-September) of the Fiscal Year Renewal every Six (6) Months every Job Order	Every Procurement Period (March-September) of the Fiscal Year Renewal every Six (6) Months every Job Order	Every Procurement Period (March-September) of the Fiscal Year Renewal every Six (6) Months every Job Order	Every Procurement Period (March-September) of the Fiscal Year Renewal every Six (6) Months every Job Order	Every Procurement Period (March-September) of the Fiscal Year Renewal every Six (6) Months every Job Order	At least Two (2) New-hired Laboratory Technicians onboarded	Two (2) Laboratory Technicians Retended for a year Additional One(1) Laboratory Technicians onboarded	Three (3) Laboratory Technicians retended for a year Additional One(1) Laboratory Technicians onboarded	Four (4) Laboratory Technicians retended for a year Additional One(1) Laboratory Technicians onboarded	Five (5) Laboratory Technicians retended for a year	Laboratory Head Chairperson, Dean HRMD, BSO	Laboratory Fiduciary / Internally Generated Fund **Estimated Budget:** PHP 6,000,000.00
			Upskilling and Role Clarity: Provide training programs for existing staff to fill identified skill gaps.	**Equipment Operations/ Technical Training**: Annually **Software Training**: Anually or Semi-Annually	**Equipment Operations/ Technical Training**: Annually **Software Training**: Anually or Semi-Annually	**Equipment Operations/ Technical Training**: Annually **Software Training**: Anually or Semi-Annually	**Equipment Operations/ Technical Training**: Annually **Software Training**: Anually or Semi-Annually	**Equipment Operations/ Technical Training**: Annually **Software Training**: Anually or Semi-Annually	Laboratory Staff and Faculty Participation	Laboratory Staff and Faculty Participation	Laboratory Staff and Faculty Participation	Laboratory Staff and Faculty Participation	Laboratory Staff and Faculty Participation	HRMD, Equipment Supplier Training Coordinator, Laboratory Head	FSD Funds **Estimated Budget:** PHP 120,000.00
		Maintenance of Facility and Laboratory Equipment and Instruments	Establish Preventive Maintenance Program, Corrective Maintenance Program, and Monitoring that includes Calibration Plan, etc.	Annually Every start of Academic Year	Annually Every start of Academic Year	Annually Every start of Academic Year	Annually Every start of Academic Year	Annually Every start of Academic Year	Schedule adhered to with 60% compliance	Schedule adhered to with 70% compliance	Schedule adhered to with 80% compliance	Schedule adhered to with 90% compliance	Schedule adhered to with 100% compliance	Laboratory Technician Laboratory Head Chairperson Dean	N/A
			Conduct monthly inspections of all laboratory equipment and facility infrastructure.	Monthly	Monthly	Monthly	Monthly	Monthly	1) 60% of monthly inspections conducted 2) 40% missed inspections due to scheduled delays	1) 70% of monthly inspections conducted 2) 30% missed inspections due to scheduled delays	1) 80% of monthly inspections conducted 2) 20% missed inspections due to scheduled delays	1) 90% of monthly inspections conducted 2) 10% missed inspections due to scheduled delays	1) 100% of monthly inspections conducted 2) 0% missed inspections due to scheduled delays	Laboratory Technician Laboratory Head Faculty	N/A
			Develop and Updating of a Digital Equipment Monitoring and Reporting System	Developing of System in January - February 2025	Updating and Enhancing the System Annually	Updating and Enhancing the System Annually	Updating and Enhancing the System Annually	Updating and Enhancing the System Annually	90% of equipment issues are reported within 24 hours. 100% of critical issues addressed within 48 hours.	90% of equipment issues are reported within 24 hours. 100% of critical issues addressed within 48 hours.	90% of equipment issues are reported within 24 hours. 100% of critical issues addressed within 48 hours.	90% of equipment issues are reported within 24 hours. 100% of critical issues addressed within 48 hours.	90% of equipment issues are reported within 24 hours. 100% of critical issues addressed within 48 hours.	Laboratory Technician Laboratory Head	N/A
			Conduct Regular Staff Training on Equipment Handling and Maintenance	Semi-Annually/ Semestral	Semi-Annually/ Semestral	Semi-Annually/ Semestral	Semi-Annually/ Semestral	Semi-Annually/ Semestral	1) 80% of lab staff completed equipment handling and basic maintenance training. 2) 90% reduction in user-induced errors after training.	1) 85% of lab staff completed equipment handling and basic maintenance training. 2) 90% reduction in user-induced errors after training.	1) 90% of lab staff completed equipment handling and basic maintenance training. 2) 95% reduction in user-induced errors after training.	1) 95% of lab staff completed equipment handling and basic maintenance training. 2) 100% reduction in user-induced errors after training.	1) 100% of lab staff completed equipment handling and basic maintenance training. 2) 100% reduction in user-induced errors after training.	Laboratory Head Laboratory Technicians Student Assistant	N/A
			Implement Resource Allocation System	**Room/Facility Assignment**: Semestral for Regular Laboratory Schedule / Weekly for Reservations **Equipment/Tools Utilization Schedule**: Semestral for Regular Laboratory Schedule / Weekly for Reservations	**Room/Facility Assignment**: Semestral for Regular Laboratory Schedule / Weekly for Reservations **Equipment/Tools Utilization Schedule**: Semestral for Regular Laboratory Schedule / Weekly for Reservations	**Room/Facility Assignment**: Semestral for Regular Laboratory Schedule / Weekly for Reservations **Equipment/Tools Utilization Schedule**: Semestral for Regular Laboratory Schedule / Weekly for Reservations	**Room/Facility Assignment**: Semestral for Regular Laboratory Schedule / Weekly for Reservations **Equipment/Tools Utilization Schedule**: Semestral for Regular Laboratory Schedule / Weekly for Reservations	**Room/Facility Assignment**: Semestral for Regular Laboratory Schedule / Weekly for Reservations **Equipment/Tools Utilization Schedule**: Semestral for Regular Laboratory Schedule / Weekly for Reservations	Reduce resource allocation conflicts by 30% in the first 5 months.	Reduce resource allocation conflicts by 30% in the first 5 months.	Reduce resource allocation conflicts by 70%.	Reduce resource allocation conflicts by 70%.	Reduce resource allocation conflicts by 90%.	Laboratory Head Laboratory Technicians Student Assistant	N/A

Figure 6.132 *Civil Engineering Laboratory 5-Year Development Plan (2025–2029). This strategic framework outlines the objectives, action plans, implementation timelines, performance indicators, and resource allocations designed to enhance laboratory facilities, strengthen instructional and research capabilities, and ensure continuous quality improvement within the Civil Engineering Department*

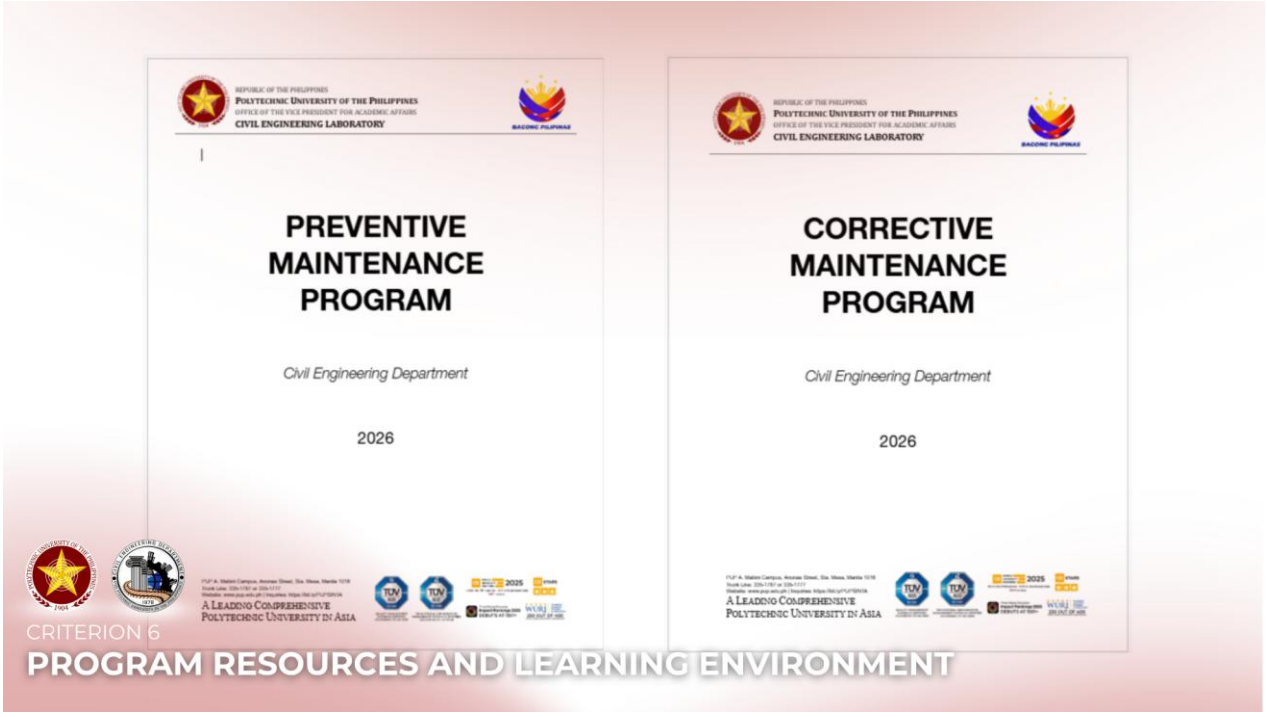
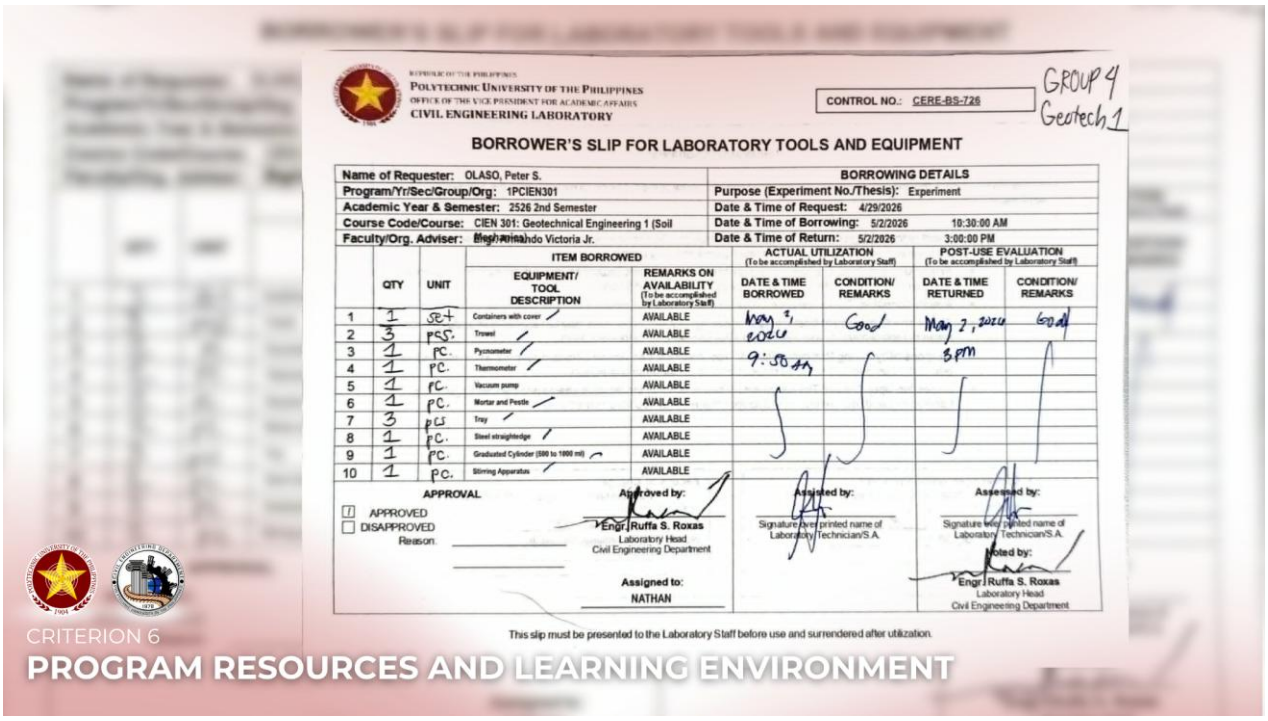


Figure 6.133 *Preventive and Corrective Maintenance Programs | 2026 prepared by the Laboratory Head, formally reviewed and approved by the Department Chairperson and College Dean, ensuring proper planning, accountability, and effective management of laboratory facilities and equipment.*



REPUBLIC OF THE PHILIPPINES
POLYTECHNIC UNIVERSITY OF THE PHILIPPINES
OFFICE OF THE VICE PRESIDENT FOR ACADEMIC AFFAIRS
CIVIL ENGINEERING LABORATORY

CONTROL NO.: CERE-BS-726

GROUP 4
Geotech 1

BORROWER'S SLIP FOR LABORATORY TOOLS AND EQUIPMENT

Name of Requester: OLASO, Peter S.	BORROWING DETAILS
Program/Yr/Sec/Group/Org: 1PCIEN301	Purpose (Experiment No./Thesis): Experiment
Academic Year & Semester: 2526 2nd Semester	Date & Time of Request: 4/29/2026
Course Code/Course: CIEN 301: Geotechnical Engineering 1 (Soil	Date & Time of Borrowing: 5/2/2026 10:30:00 AM
Faculty/Org. Adviser: Engr. Alisando Victoria Jr.	Date & Time of Return: 5/2/2026 3:00:00 PM

	ITEM BORROWED				ACTUAL UTILIZATION (To be accomplished by Laboratory Staff)		POST-USE EVALUATION (To be accomplished by Laboratory Staff)	
	QTY	UNIT	EQUIPMENT/ TOOL DESCRIPTION	REMARKS ON AVAILABILITY (To be accomplished by Laboratory Staff)	DATE & TIME BORROWED	CONDITION/ REMARKS	DATE & TIME RETURNED	CONDITION/ REMARKS
1	1	set	Containers with cover	AVAILABLE	May 2, 2026 9:50 AM	Good	May 2, 2026 3 PM	Good
2	3	pcs.	Trowel	AVAILABLE				
3	1	pc.	Pycnometer	AVAILABLE				
4	1	pc.	Thermometer	AVAILABLE				
5	1	pc.	Vacuum pump	AVAILABLE				
6	1	pc.	Mortar and Pestle	AVAILABLE				
7	3	pcs	Tray	AVAILABLE				
8	1	pc.	Steel straightedge	AVAILABLE				
9	1	pc.	Graduated Cylinder (500 to 1000 ml)	AVAILABLE				
10	1	pc.	Stirring Apparatus	AVAILABLE				

APPROVAL
[/] APPROVED
[ ] DISAPPROVED
Reason: _____

Approved by:
Engr. Ruffa S. Roxas
Laboratory Head
Civil Engineering Department

Assigned to:
NATHAN

Assisted by:
Signature over printed name of Laboratory Technician/S.A.

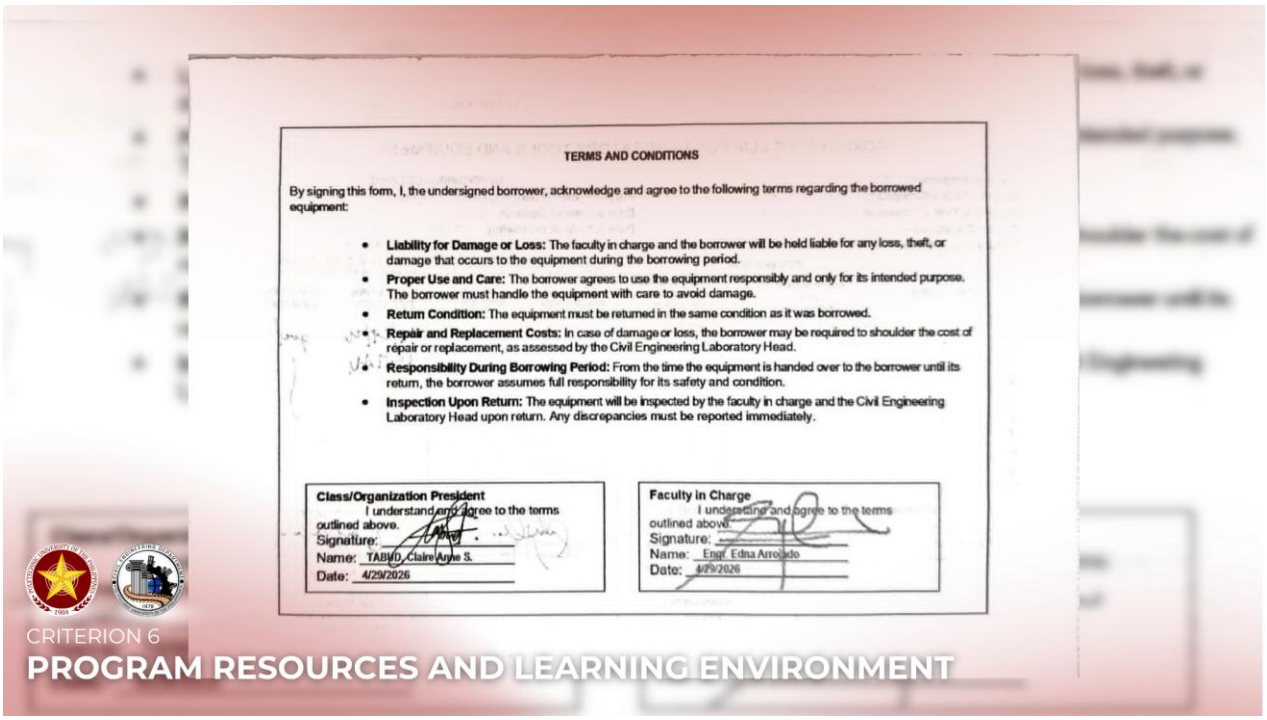
Assessed by:
Signature over printed name of Laboratory Technician/S.A.

Noted by:
Engr. Ruffa S. Roxas
Laboratory Head
Civil Engineering Department

This slip must be presented to the Laboratory Staff before use and surrendered after utilization.

CRITERION 6
PROGRAM RESOURCES AND LEARNING ENVIRONMENT

Figure 6.134 *An Accomplished Borrower's Slip reflecting the approval by Laboratory Head, assignment, actual utilization with assistance from Laboratory Staff, and post-utilization evaluation, ensuring accountability, proper monitoring, and efficient management of laboratory resources.*



TERMS AND CONDITIONS

By signing this form, I, the undersigned borrower, acknowledge and agree to the following terms regarding the borrowed equipment:

- **Liability for Damage or Loss:** The faculty in charge and the borrower will be held liable for any loss, theft, or damage that occurs to the equipment during the borrowing period.
- **Proper Use and Care:** The borrower agrees to use the equipment responsibly and only for its intended purpose. The borrower must handle the equipment with care to avoid damage.
- **Return Condition:** The equipment must be returned in the same condition as it was borrowed.
- **Repair and Replacement Costs:** In case of damage or loss, the borrower may be required to shoulder the cost of repair or replacement, as assessed by the Civil Engineering Laboratory Head.
- **Responsibility During Borrowing Period:** From the time the equipment is handed over to the borrower until its return, the borrower assumes full responsibility for its safety and condition.
- **Inspection Upon Return:** The equipment will be inspected by the faculty in charge and the Civil Engineering Laboratory Head upon return. Any discrepancies must be reported immediately.

Class/Organization President
I understand and agree to the terms outlined above.
Signature:
Name: TABUD, Claire Anne S.
Date: 4/29/2026

Faculty in Charge
I understand and agree to the terms outlined above.
Signature:
Name: Engr. Edna Arrogado
Date: 4/29/2026

CRITERION 6
PROGRAM RESOURCES AND LEARNING ENVIRONMENT

Figure 6.135 *Terms and Conditions at the back of the Room and Equipment Reservation Slip. The document reinforces* ***accountability*** *in the use of laboratory rooms, tools, and equipment while ensuring that all utilization is conducted under* ***proper supervision*** *and in accordance with established laboratory policies and procedures.*

ATTACHMENTS

Attachment C6-01 - PUP CEA Layout and Floor Plans
Attachment C6-02 - Photo Documentation of Administrative Offices
Attachment C6-03 - Photo Documentation of Faculty Room
Attachment C6-04 - BSCE Room Schedule
Attachment C6-05 - Photo Documentation of BSCE Classrooms
Attachment C6-06 - Photo Documentation of BSCE Laboratory Rooms
Attachment C6-07 - Photo Documentation of BSCE Laboratory Equipment
Attachment C6-08 - Photo Documentation of BSCE Drafting Rooms
Attachment C6-09 - BSCE Laboratory Schedule
Attachment C6-10 - BSCE Facilities and Equipment Utilization Logbook
Attachment C6-11 - BSCE Facilities and Equipment Utilization Report
Attachment C6-12 - Compliance Assessment of CE Laboratory Equipment Based on CMO 92 s. 2017
Attachment C6-13 - Health and Safety
Attachment 6-14 - Assessment of Adequacy of CE Facilities and Learning Resources AY 2025-2026 2nd Semester
Attachment C6-15 - Deed of Donation
Attachment C6-16 - Technical Reports on the Donation of BSCE Alumni
Attachment C6-17 - Photo Documentation of Study Areas
Attachment C6-18 - Photo Documentation of Student Centers
Attachment C6-19 - Software License Inventory Register
Attachment C6-20 - Class Orientation PowerPoint
Attachment C6-21 - BSCE Laboratory Orientation PowerPoint
Attachment C6-22 - Photos of Safety Signages and Posters
Attachment C6-23 - Copies of the Laboratory Manuals
Attachment C6-24 - BSCE Laboratory Personnel and Staffing
Attachment C6-25 - BSCE Laboratory Guidelines
Attachment C6-26 - BSCE Laboratory Preventive and Corrective Maintenance Log
Attachment C6-27 - BSCE Facilities and Equipment Maintenance Program and Monitoring
Attachment C6-28 - Copy of Incident Reports
Attachment C6-29 - Photos of Fire Extinguishers and First Aid Box in BSCE Facilities
Attachment C6-30 - Calibration Certificates
Attachment C6-31 - Technical Assessment of Equipment Repair

Attachment C6-32 - Request for Corrective and Preventive Maintenance

Attachment C6-33 - Inventory of BSCE Laboratory Equipment

Attachment C6-34 - Historical Summary of Requested and Procured Physical Resources

Attachment C6-35 - Library Resources Supporting the BS Civil Engineering Program

Attachment C6-36 - Civil Engineering Laboratory 5-Year Development Plan (2025–2029)

Attachment C6-37 - Civil Engineering Preventive and Corrective Maintenance Program

Attachment C6-38 - Scanned Copy of Accomplished Laboratory Slips