Engineering Department

Geodetic, Electrical and Civil (GEC) 4.0

Extension Program
2019-2022

Republic of the Philippines
Mountain Province State Polytechnic College
Bontoc, Mountain Province

RESEARCH DEVELOPMENT AND EXTENSION SECTOR

RECEIVED
MPSPC-RECORDS OFFICE
BY:
DATE: 13 NOV 2019

November 12, 2019

ELMER D. PAKIPAC
Director, Extension Unit
Mountain Province State Polytechnic College
Bontoc, Mountain Province

Sir:

This is to respectfully transmit to your office the Engineering Department Extension Program for 2019-2022: **"Geodetic, Electrical and Civil (GEC) 4.0"** for your perusal and recommendation for appoval.

Thank you very much.

Respectfully yours,

CLAIRE R. CAMTUGAN
Community Affairs Assistant
Tadian Campus

I. CONTEXT OF EXTENSION

The Engineering Extension Program, branded as GEC 4.0 which stands for the three programs of the department namely Geodetic, Electrical and Civil, 4.0 as we are now facing the Fourth Industrial Revolution, where technology is changing the way we interact, where we aim to bring together a wide range of partners who can help facilitate upskilling and holistic learning for the youth, so that everyone can contribute to our changing society, initiated as an outcome of three things.

First, it is in response to the needs of the community. GEC 4.0 is primarily needs-based. Its program components are guaranteed to be vibrant, applicable and receptive to varying community needs.

Secondly, Extension Programs is one of the major functions of Higher Education Institutions as envisioned by the Commission on Higher Education. Extension Programs serve as an avenue to make an institution's presence to be felt in the community. GEC 4.0 proposal conceptualization, approval and its implementation is to help in the attainment of the MPSPC mission that is to produce globally competitive leaders molded from a tradition of excellence in instruction, research, effective governance, sustainable entrepreneurship, and an environment that assumes major responsibility in cultural vitality and well-being of the public. This is by assisting community livelihood alleviation through the offerings of skills related trainings. Services were determined through survey and assessment of training needs, problems and resources of different communities in the province and communities of adjoining provinces. The sharing of expertise of the department will also help in the attraction of clients to enroll in the different programs while gathering relevant feedback for curricular improvement.

Third, the extension program upholds the major thrust of the College contained in HERITAGE. Specifically, it hinges on R - Relevant Student Services, Development and Welfare Program and T- Technology, Facilities and Assets Enhancement Program. These two thrusts motivate the Engineering Extension Program.

II. PROGRAM DESCRIPTION

A. Goals and Objectives

GEC 4.0 wishes to advocate and work for the attainment and realization of the Vision, Mission, Goals and Objectives of MPSPC, Extension Unit and the Department of Engineering to the communities. This is for them to understand the need for sustainable development through integrating curricular offerings of the department, skills development and outreach projects for livelihood alleviation and sustainability.

Specifically, the program aims to:

1. Extend the expertise and skills of the department's personnel to communities for rural development; and
2. Help alleviate livelihood in the community

Dissemination of MPSPC, extension unit and department of engineering vision, mission, goals and objectives

The community people in the rural areas shall be aware on the Vision, Mission, Goals and Objectives of MPSPC, Extension Unit and Department of Engineering through the conduct of information Dissemination by the faculty of the department in his/ her hometown or place. This approach is for the people to realize the existence of the college as one instrument for rural development.

1. Geodetic Engineering – Land Surveys

NOTE: The following limitations should be followed in conducting Extension Services (Land Surveying) for the extension workers not to violate the GEP Code of Ethics and the GEP Rate approved by the GEP-CAR Chapter

a. All land surveys should be conducted in accordance with the provisions of the Revised Manual of Land Surveying Regulations of the Philippines (DAO No. 98-12).

b. All surveys conducted will be for identification, verification, area and taxation purposes only not for registration purposes.

c. The areas concern to be surveyed are limited only to the following:
   1. Public Cemeteries
   2. Public School Sites
   3. Churches
   4. Dap-ay

d. The area stated above to be surveyed should not exceed an aggregate area of three thousand (3,000) square meters. The exceeding area shall be borne by the application following the Survey Rate approved by the Geodetic Engineers of the Philippines CAR-Chapter.

e. All expenses shall be shouldered by the applicant (Transportation, Accommodation, food and other expenses agreed between the applicants and extension workers)

2. Electrical Engineering

a. Electrical Installation and Maintenance, and Electrical Safety

3. Civil Engineering (Detailed Engineering Assistance)

a. Surveying/ Plotting and Mapping
b. Site Investigation
c. Soil and Foundation Investigation
d. Construction Materials Investigation
e. Preparation of Design Plans
f. Preparation of Technical Specification
g. Preparation of Quantity and Cost Estimate
h. Preparation of Program of Work
i. Preparation of Utility Relocation Plan

4. Skills Development

a. Detailed Engineering Assistance
b. Electrical Installation and Maintenance
c. Plumbing
d. Computer Literacy
e. Plotting and Mapping

B. Framework of Extension Services

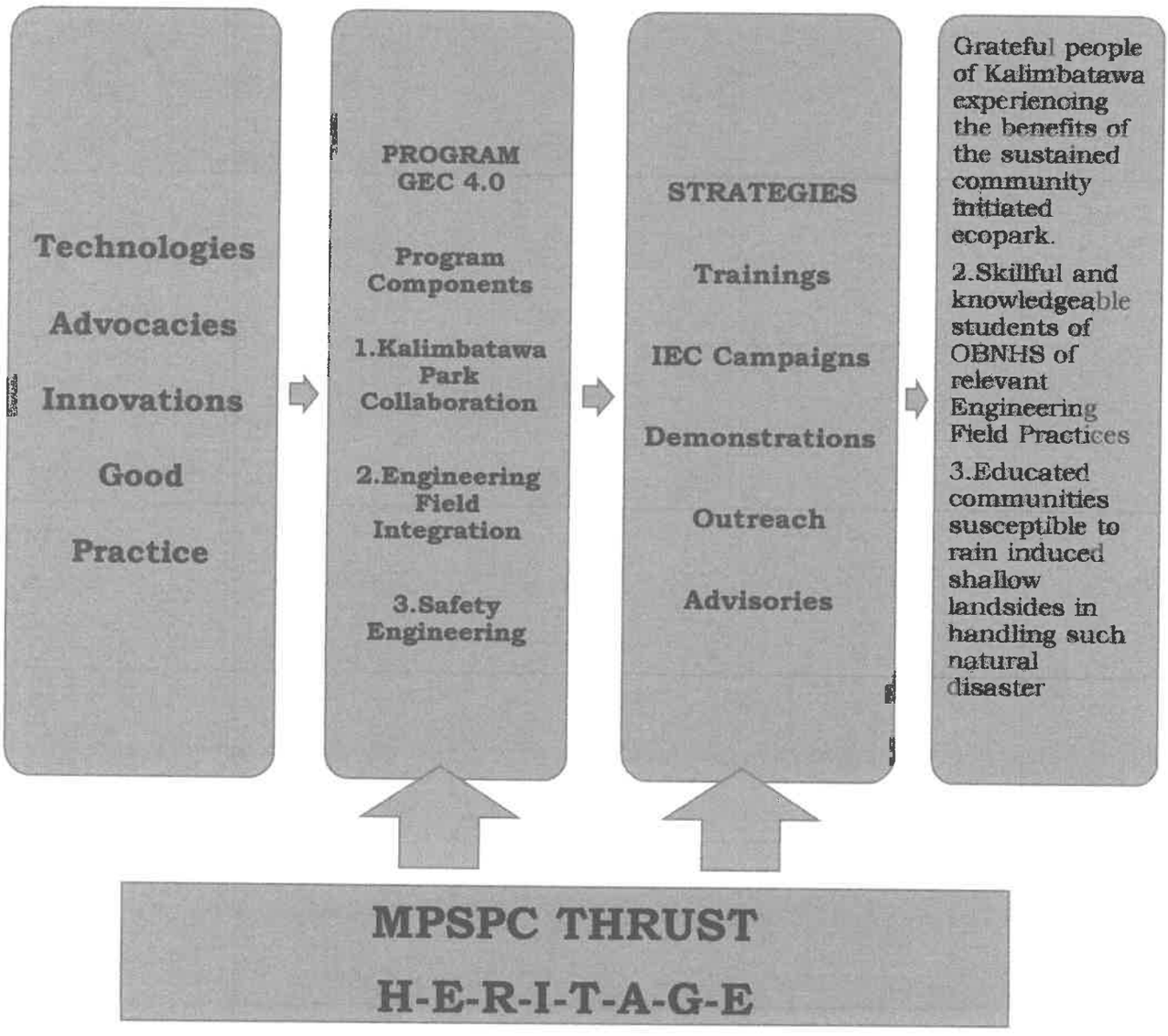

Figure 1. Framework of extension

Generally, the Engineering framework is anchored on the college thrust summarized in the acronym HERITAGE. As a source of knowledge and skills, the Engineering Department benchmarks on its good practices in all aspects in the technologies, advocacies and innovations as the input. From this, the Engineering Department shall implement its program components – Kalimbatawa Park Collaboration, Engineering Field Integration and Safety Engineering. Each program is congruent to Geodetic, Civil and Electrical Engineering respectively. The implementation of the programs shall utilize strategies in the form of trainings, IEC campaigns, demonstrations, advisories and outreach. All these are geared towards having sustained community initiated Eco park to which tourists will be appreciating and to where the community people of Kalimbatawa will have some sort of livelihood and job opportunities; Skillful and knowledgeable students of Otucan–Bila National High School of the various Engineering field practices and educated communities susceptible to rain induced shallow landslides.

C. Strategies

In order to maximize transfer of knowledge and skills to the extension community, the following strategies will be adopted.

a. Trainings – A series of trainings on the field of civil, geodetic and electrical engineering are the definite modes for the transfer of knowledge and skills.
b. IEC Campaigns
c. Demonstrations – Procedures of relevant engineering undertakings are shared to the community people.
d. Advisory
e. Outreach

III. PROGRAM COMPONENTS

1. Kalimbatawa park collaboration and engineering field integration as program component

The training courses, which are identified for curriculum integration of the Engineering Department, are in line with the courses offerings of the programs of the department. The training courses identified shall be implemented to complete 54 hours or depending on the courses duration which will be credited with the corresponding units of the course. Unit credits shall be awarded to high school graduates who aim to enroll in the corresponding program of the department after evaluation and recommendation of the program chair and upon paying equivalent tuition fees.

TRAINING COURSES	COURSES/ PROGRAMS
1. Computer Literacy/ Operation, Auto CAD, MIS and HTML	- Computer 11: Computer Fundamentals and Programming - Comp 12: Computer Aided Drafting - ICT 11: Information and Communication Technology
2. Electrical Installation, Maintenance and Safety	- EE 311 and EE 321: Electrical Circuits I and II - EE 524: Electrical Engineering Safety
3. Plumbing Design and Estimate	- CE 312 and CE 322: Building Design I and II

The department's personnel are tapped to extend and share their professional services and expertise to recipient communities. The projects identified for outreach and community involvement are conducted in public premises with MOA.

2. Engineering Field Integration

Mountain Province State Polytechnic College (MPSPC) as a state own institution of higher learning is mandated to conduct community outreach program as part of its extension program. The Engineering Department is mandated to formulate to conduct relevant, effective and efficient engineering extension activities in support to the extension services anchored on the HERITAGE thrust of the incumbent administration.

1. KALAHI Program
2. Clean and Green Program
3. Binadang Program
4. Barangay Disaster Risk Reduction Management Committee
5. Other programs of the Barangay

3. Safety Engineering

Assessment of hazards, development and update of exposure data base, assessment of vulnerabilities of exposed elements such as communities and specific sectors, structures, livelihood and economy and potential impacts and losses due to natural disasters and climate change; development of appropriate tools for hazard, vulnerability and risk assessment.

1. Hazard Assessment (Geological, Hydro-meteorological, climate-related, etc.)
2. Exposure information, Database Tools
3. Vulnerability, Capacity and Risk Assessment

4. Climate Risk (by sector)
   a. DRR/CCA for agriculture (vulnerability to food insecurity, diversified farming, livelihood, impact assessments, food resiliency in emergencies, etc.)

   b. Climate Resiliency of highly vulnerable groups and communities (women, fisher folks, Indigenous People, coastal communities, etc.)

   c. Municipal Disaster Risk Reduction Management Council
      c.1. Committee on Relief Operation
      c.2. Committee on Evacuation
      c.3. Committee on Search and Rescue
      c.4. Committee on Planning and Operations
      c.5. Committee on Fire Services
      c.6. Committee on Damage Assessment, Rehabilitation and Engineering (Physical and Social)
      c.7. Committee on Communication and Warning
      c.8. Committee on Intelligence and Disaster Analysis (IDA)

IV. IMPLEMENTATION PROCESS

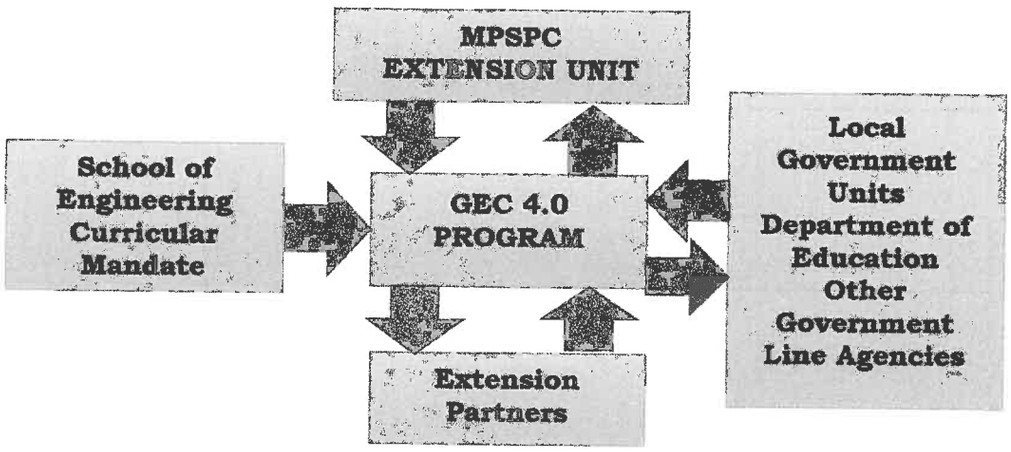

Figure 2. Implementation Process of engineering extension program

The implementation process commences from the School of Engineering Curricular mandate. This mandate mounts the GEC 4.0 Program which is subsequently broken down into three sub-programs: Kalimbatawa Park Collaboration, Engineering Field Integration and Safety Engineering. The program may comply to the needs of the clients which may be in the form of trainings, IEC campaigns, demonstrations, advisories and outreach. It is expected that the program is carried out with the support of different extension partners.

Research for Training Needs, Identification of Community Needs, Problems and Resources

Research proposal shall be prepared, reviewed and approved that aims to determine the training needs, problems and resources of communities which will serve as baseline information in the conceptualization of training design for extension projects

Advocacy of MPSPC, Tadian Campus and Extension VMGO

The MPSPC Extension Unit, Engineering Department VMGO will be discussed and explained to the community people for awareness and possible during Career Guidance in the different secondary and elementary schools and information dissemination drive during people's day and community meetings.

A. Linkage and Collaboration

With the support of concerned institutions and agencies, the extension program of the department will further be realized. These different concerned agencies will provide technical assistance, equipment and resources to the department.

B. Advocacy of the Faculty Research Outputs and Department Expertise and Projects

The research outputs and projects of the faculty in the department shall be advocated to the different communities during people's day and meetings.

C. Adopt a Barangay/ Adopt a School Projects

The sustainability of the department's extension services is through "adopt A barangay or school" for skills development.

D. Development a Technology

Technologies to be extended to the community will be developed as this is part of the program. The faculty of the Engineering Department will be involved in the preparation. The technologies will be in print or non-print in the form of a prototype or a scale model.

E. Faculty and Staff Development

The faculty and staff shall also attend relevant trainings and seminars that would help enhance the department's extension program and services. On the other hand, the faculty shall also comply with requesting agencies tapping their expertise for rural and community development.

F. Implementation of Activities

The activities will be implemented thereafter the designs have been approved. Trainings and actual engineering field actions will the primary types of activities to be conducted.

G. Monitoring and Evaluation

Evaluation will be done after the conduct of the activities. Monitoring will be done throughout the activity up to the end of the school year to assess utilization of skills and knowledge.

H. Impact Assessment

An impact assessment study will be conducted to establish the impact made by trainings and engineering field activities doled out to the extension stakeholders.

V. EVALUATION AND MONITORING

Program Components	Activities	Extension Service Delivery	Pre-work Administrative Forms	Implementation Results Monitoring Tools	Outcome Evaluation Tools
Kalimbatawa Park Collaboration	• Surveying • Plotting • Mapping • Landscaping	Adopt a Barangay	• MOA • TNA • Activity Design	• Attendance Form • Terminal Report	• Monitoring and Evaluation Form • Sustainability Plan
Engineering Field Integration	• Electrical Installation and Maintenance • Detailed Civil Engineering Assistance • Documentation	Adopt a school	• MOA • TNA • Activity Design	• Attendance Form • Terminal Report • Progress report	• Monitoring and Evaluation Form • Sustainability Plan • Assessment form
Safety Engineering	• Workshop • Documentation • Site Investigation • Soil and Foundation Investigation	Training	• MOA • TNA • Activity Design	• Attendance Form • Terminal Report • Progress report	• Monitoring and Evaluation Form • Sustainability Plan • Assessment form

VI. RECOMMENDATION AND APPROVAL

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This briefer is developed by the Engineering Department in collaboration with the Extension Unit.