

Benguet State University

Office of the Vice President for Research and Extension

Research and Extension Annual Report 2019



ICFEC

2nd International Conference on
Food, Environment, and Culture

Building Climate Resilience thru



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A. PUBLICATIONS

A total of 41 research articles were published in international and national peer reviewed refereed journals. Of the total number, 34% was published in international journals while 66% was published in national journals.

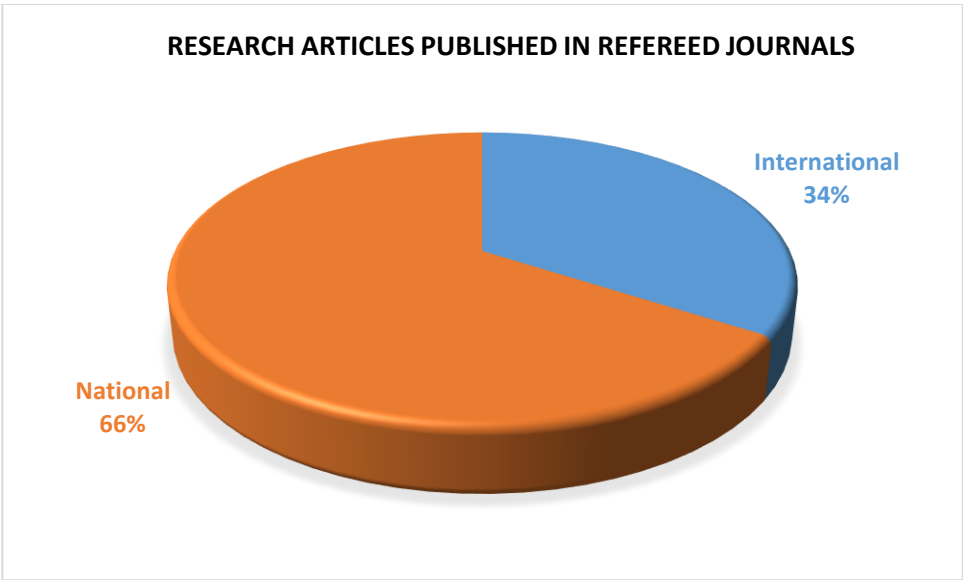


Figure 1 - Distribution of the number of papers published in international and national journals

B. RESEARCH PAPER PRESENTATION

A total of 104 research papers were presented by BSU researchers to international, national, and regional conference

Table 1. Paper Presented in International, National, Regional Fora

Paper Presentation in the ff. fora:	No. of Papers Presented	Remarks
International	46	40 oral presentation ; 6 posters
National	25	23 oral presentation; 2 posters
Regional	33	23 oral presentation ; 10 posters
Total	104	

AGENCY IN-HOUSE REVIEW 2019

A total of 205 BSU researches were evaluated during the Agency In-House Review conducted on August 7-9 2019 held at the Northern Philippine Root Crops Research and Training Center. Of the total number, 28% was presented as completed researches, 35% was presented as ongoing researches and 37% were proposals.

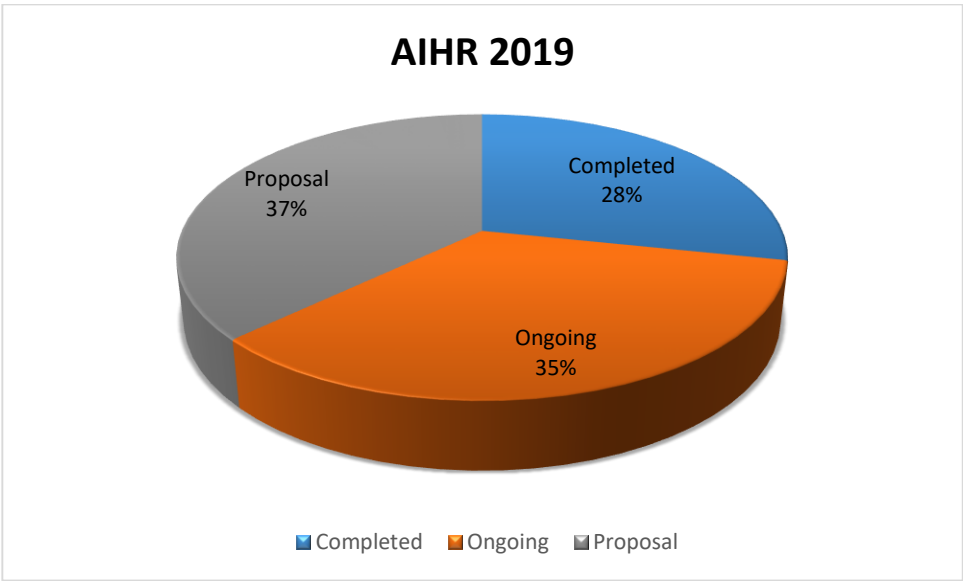


Figure 2 - Distribution of the number of papers presented the 2019 Agency In-House Review

C. OUTSIDE FUNDED PROJECTS APPROVED FOR 2019

The University was able to generate more than Php54 M pesos from outside funded projects as follows:

Table 2. Resources Generated for 2019

Title of Programs/Projects	Researchers	Name of Funding Agency/Source	Duration		Amount of Funding Support (in Peso)
			From	To	
Tuklas Lunas Consortium in the Cordillera: Documentation, Standardization and Formulation of dosage forms from Indigenous plants and microorganisms with bioactivities Study Title: Standardization of Crude Herbal Formulation for Anti-diabetes from Plants Indigenous to Benguet	Louisa P. Pladio, Rodora A. Abyado, Pearly Joyce M. Tawali	DOST- Philippine Council for Health Research and Development (PCHRD)	March 1, 2019	June 30, 2020	8,435,491.20

Title of Programs/Projects	Researchers	Name of Funding Agency/Source	Duration		Amount of Funding Support (in Peso)
			From	To	
Potato R & D Center: Proj. 1. Development of Insect Pests and Diseases Management of Quality Seed Production Proj. 2. Enhancing the Micropropagation System of Potato Proj. 3. Application of Improved Cultivation System and Storage Technique for Potato seed Production	Cynthia G. Kiswa, Jocelyn C. Perez, Hilda L. Quindara	DOST-GIA	July 1, 2019	June 30, 2022	31,355,154.56
Enhancing GAP Compliance & Climate Resilience of Spray-Type Chrysanthemum Production in La Trinidad	Carlito P. Laurean,	DOST - PCAARRD	September 16, 2019	August 15, 2020	4,000,000.00
Highland Science for the Convergence of Agriculture and Tourism: Benguet Landscape and Ornamental Offerings of a Magsasaka Syentista (Highland SciCAT:BLOOMS)	Maria Luz D. Fang-asan	DOST - PCAARRD	October 1, 2019	September 30, 2021	4,705,622.40
Commercialization of Quality Seed Potato thru the Standardized Seed Production System Study 1 Strengthening Farmers' Capacities as Quality Seed Growers and Entrepreneurs Study 2. Piloting of the Standardized Potato Seed Production System in Benguet and Mountain Province Study 3. Economic Analysis on the Standardized Potato Seed Production System	Cynthia Kiswa, Teresita Masangcay, Jocelyn Perez, Gabby Dao-ines, Jennie Balao, Arlene Bautista, Jophr L. Galian, Monica S. Gambican, Patricia Akiate, Leah May Tayan		January 2019	December 2021	6,008,922.46
				TOTAL	54,505,190.62

D. AWARDS/RECOGNITIONS

The Philippine Council for Agriculture, Aquatic and Natural Resources Research and Development (PCAARRD) recognized Dr. Carlito P. Laurean as Pantas Awardee for Most Outstanding Research Administrator during the PCAARRD anniversary and awarding ceremony held on June 19, 2019 at the Philippine International Convention Center (PICC) Manila.

BSU researchers were recognized in international, national, regional and institutional/local RDE activities conducted within and outside BSU.

Four student theses also emerged as Best Research Papers during the 3rd Regional Student Research Congress held last October 3, 2019 at the Abra State Institute of Sciences and Technology, Lagangilang, Campus.

Meanwhile, 8 student theses emerged as Best Research Papers during the 4th University Student Research Congress held on June 7, 2019 at the Northern Philippine Root Crops Research and Training Center.

The 8 student research papers are among the 42 theses that competed during the activity. Fourteen competed for the Science and Technology (S & T) category and 19 for the Social category in the undergraduate level. Nine competed for the social category and 3 competed in the S & T category in the graduate level.

Table 3. Awards/Recognitions				
Awardee/s	Title of Award	Title of Research Paper	Date Received	Awarding Organization/ Conferring Body
International				
Nordalyn Pedroche	Best Paper Award	Understanding Morphology and Classification in the Classroom: Seeing Through the Senses of Nematodes	May 31, 2019	Faculty of Industrial Education and Technology King Mongkut's Institute of Technology Ladkrabang (KMITL), Bangkok, Thailand
Kacy O. Labon, Rhea S. Loncio, Ruth S. Batani, Cheryll C. Launio, Teresita D. Masangcay	Best Poster	Documentation of Success Stories in the Use of Trichoderma koningii in Philippine Highland Farming Systems	November 29, 2019	Benguet State University (2nd International Conference on Food Environment and Culture)
Nova D. Doyog, Derek C. Bayer, Christine A. Parian, Roscinto Ian C. Lumbres, Bernard Peter O. Daipan, Chinsu Lin and Young Jin Lee	Best paper (forestry category)	Effects of Atmospheric Correction and Pansharpening of Landsat 8 OLI & TIRS on AGB Estimation Accuracy	November 29, 2019	Benguet State University
Arlene Wayet, Carlito Laurean, Emilia Dayap and Jocelyn Perez	Finalist (environment category)	Physical, Chemical and Biological Degradation of Three Soil Series in La Trinidad, Benguet: Impact on Soil Fertility and Microbial Abundance” by under the	November 29, 2019	Benguet State University
National				
Carlito P. Laurean	PANTAS Award	Outstanding Research Administrator	June 19, 2019	PCAARRD
Cheryll C. Launio, Kacy O. Labon, Alladin A. Bañez, Ruth S. Batani	Gold Award, Best AFMA R & D Paper for Socio Economic Research	Economic Analysis using Biological Control and Biofertilizer in Philippine Highland Farming: Case of Trichoderma Koningii	October 17, 2019	DA-BAR
Belinda Tad-awan, Hector Gayomba, Teresita Masangcay, Jasmin Chomawat, Wilner Mauting, Virginia Tapat and Magdalena Wanawan	Gold Award, Organic Agriculture Research	Increasing Productivity and Value Heirloom Rice Landraces in the Cordillera Highlands through Variety Evaluation and Organic Production Technologies	October 17, 2019	DA-BAR
Regional				
Botangen, Esther T. Mama-o, Joyce K. Gonzales, Ines C.	Outstanding Utility Model (2nd Runner up)	Hopia (Bacpia) with Sweetpotato Haleya Filling	November 20, 2019	Department of Science and Technology, Cordillera

Awardee/s	Title of Award	Title of Research Paper	Date Received	Awarding Organization/ Conferring Body
				Administrative Region
Norma Ramos, Espino C. Tiw-an and Leonardo Dumalhin	LIKHA (Creative Research) Regional Winner	Cocoon Deflossing Machine	November 20, 2019	Department of Science and Technology, Cordillera Administrative Region
Jao-jaoSomyden, Johnabel Basatan, Thea Contada, Pelin Belino and Ruda Fe Suanding	1st Runner Up, LIKHA Regional Award	Basil Flavored Ice Cream	November 20, 2019	Department of Science and Technology, Cordillera Administrative Region
Jao-jaoSomyden, Johnabel Basatan, Thea Contada, Pelin Belino and Ruda Fe Suanding	2nd Runner Up, LIKHA Regional Award	Assorted Freeze-Dried Local Fruits	November 20, 2019	Department of Science and Technology, Cordillera Administrative Region
Stanley F. Anongos, Leonardo L. Samonte	3 rd Best Paper (Social Sciences Category)	Accommodation of Indigenous Dances in Higher Education Institutions in CAR	November 19, 2019	CorCAARRD
Matyline A. Camfili-Talastas, L Ag-a, F Sabado	1 st Best Paper (Social Science Category)	Learning Day-eng and Liwliwa as told by Ypidlisan	November 19, 2019	CorCAARRD
Apler J. Bansiong	2 nd Best Poster	Readability Content and Mechanical Feature Analysis of Selected Commercial Science Textbooks Intended for Third Grade Filipino Learners	November 19, 2019	CorCAARRD
Ruth Batani, Romeo Gomez, Cheryl Launio, Betty Listino.	2 nd Best Paper (Development Category)	Assessment field, Validation and Documentation of Evidence-Based Ecosystem Adaptation Measures with Potential for Scaling-up in Indigenous Cultural Communities	October 3, 2019	CorCAARRD
Andres A. Basalong, Von Y. Amado, Margelyn J. Pasigon, Hazen Lyn B. Talbino	2 nd Best Paper Award (Research Category)	Impact of different postharvest processing methods on the occurrence of ochratoxin A and cupping quality of Arabica coffee	October 3, 2019	CorCAARRD
Grace Backian, Ammie Ngaotoy, Betty Gayao, Dalen Meldoz, Jophr Galian	1st Best Poster (Social-AANR category)	Survey on the Prevalence and Effect of Taro Leaf Blight (Phytothora colocasiae) and Taro Beetle (Papuana sp.) on Livelihood and Food Security of Indigenous Growers in Benguet and Nueva Viscaya	October 3, 2019	CorCAARRD
Leonardo L. Samonte	3 rd Best Paper (Social AANR Category)	The Practice of Suplay: A Partnership Venture Between the Capitalists and Vegetable Farmers-Suplay of Bauko, Mountain Province and Mankayan, Benguet Province	October 3, 2019	CorCAARRD

Awardee/s	Title of Award	Title of Research Paper	Date Received	Awarding Organization/ Conferring Body
Marietta Amatorio, Criselda Battad, Edlyn Mae Ciano, Joy Guisoben, Nanette Marpa	1 st Best Paper (Social-AANR Category)	"BSU-CVM DA-BAI: Antimicrobial Resistance Surveillance Project in CAR" by	October 3, 2019	CorCAARRD
Carlito Laurean, Teresita Mangili, Jocelyn Perez, Felicitas Ticbaen, Nida Organo, Andy Colte, Charlie Consolacion, Jaime Codio, Jeramil Simon	1 st t Best Paper (Development Category)	Science and Technology Community-Based Farm (STCBF) on Spray-Type Chrysanthemum Production: A Model in Accelerating Agricultural Development in Benguet	October 3, 2019	CorCAARRD
Belinda Tad-awan, Hector Gayomba, Teresita Masangcay, Jasmin Chomawat, Wilner Mauting, Virginia Tapat and Magdalena Wanawan	1 st Best Paper Award (Research Category)	Heirloom Rice Landraces of Benguet: Germplasm Conservation and Evaluation and Increasing Productivity through Production Practices	October 3, 2019	CorCAARRD
Jao-jao Somyden, Pelin Belino, Rhea Contada, Johnabel Basatan, Ruda Fe Suanding	1 st Best Paper (Industry, Energy, and Emerging Technology (IEET) Category)	Development of Local Alternative Flavors for Ice Cream: Leveraging the Processing of Local Fruits through Freeze-Drying	October 3, 2019	CIERDEC
Jovita Sim	3rd Best Poster (Social-AANR category)	Awareness of Consumers on the First, Second, and Third Degree Certification of Organic Products	October 3, 2019	CorCAARRD
Lesley Dale Umayat, Norma Banania, and Elizabeth Dom-ogen	1st Best Poster (Industry, Energy, and Emerging Technology (IEET) Category)	Development of Shelf-Stable Fermented Heirloom Rice "Binubudan"	October 3, 2019	CIERDEC
Jude Tayaben, A. Bersamin, K. Baalancod, A. Balangcod, J. Badilla, A. Cendana, E. Dom-ogen, M. Fianga-an, L. Licnachan, G. Ochoa, B. Siadto, F. Wong and T. Balangcod	2nd Best Poster (Industry, Energy, and Emerging Technology (IEET) Category)	Ipomoea batatas L.(camote) Peels as Flour Substitute in Making Chips and Hopia	October 3, 2019	CIERDEC
Ruth S. Batani	Extension Project Award	Education, Propagation and Conservation of Traditional Food Crop as Embodiment of Indigenous Knowledge in Palina, Kibungan: An Extension	May 03, 2019	Agricultural Training Institute
Institutional/ Local				
Dalen Meldoz Grace Backian Betty Gayao	1 st Best Poster-Social Category	Everlasting Award: Greatness in Achievement	Sept. 26, 2019	CorCAARRD
Amelia M. Kimeu; RTCalayan	Certificate of Recognition	Everlasting Award: Greatness in Achievement	Sept. 26, 2019	BSU
Cheryll C. Launio, Marivic C. Abyado, Erlinda B. Alupias	3rd Best Paper (Social AANR – Outside funded Category)	Adoption and Impacts of Drip and Sprinkler Irrigation Systems Study 1: Irrigation Sources and Water Management Practices of Smallholder Highland	August 9, 2019	BSU

Awardee/s	Title of Award	Title of Research Paper	Date Received	Awarding Organization/ Conferring Body
		Vegetable Farmers in Northern Philippines		
Cheryll C. Launio, Kacy O. Labon, Alladin A. Bañez, Ruth S. Batani, Rhea S. Loncio, Teresita D. Masangcay	1st Best Paper (Social AANR – BSU funded Category)	Project: Adoption and Impacts of a Biological Control: Case of <i>Trichoderma koningii</i> for Highland Agriculture Study 1: Adoption and Economic Impact of a Biological Control: Case of <i>Trichoderma koningii</i> (aka <i>Trichoderma KA</i>) for Highland Agriculture in the Philippines Study 2: Documentation of Success Stories in the Use of <i>Trichoderma koningii</i> in the Philippine Highland Farming Systems	August 9, 2019	BSU
Leonardo L. Samonte	3rd Best Paper (Social AANR- BSU funded Category)	The Practice of Suplay: A Partnership Venture Between the Capitalists and Vegetable Farmers-Suplay of Bauko, Mountain Province and Mankayan, Benguet Province	August 9, 2019	BSU
Stanley F. Anongos, Jr., Leonardo L. Samonte	1st Best Paper (Social Non-AANR – BSU Funded Category)	Accommodation of Indigenous Dances in Higher Education Institutions in CAR	August 9, 2019	BSU
Matyline A. Camfili Talastas, Lilibet Ag-a, Flori-Ann Sabado	2nd Best Paper (Social Non-AANR – BSU Funded Category)	Learning Day-eng and Liwliwa as Told by Ypidlisan	August 9, 2019	BSU
Regional Student Congress				
Krisler Wansi, Eunice Mejos	1 st Best Paper (Technical Category)	Design, Fabrication and Performance Evaluation of a Motorized Oyster Crushing Machine	October 3, 2019	CorCAARRD
Vanessa Rose Meana & Nazer Sarapeo Kimkiman	2 nd Best Paper (Technical Category)	Design, Fabrication and Performance Evaluation of a Batch-Type Fluidized Bed Coffee Roaster	October 3, 2019	CorCAARRD
Derek Bayer, Christine Parian	3 rd Best Paper (Technical Category)	Aboveground Biomass Mapping of Benguet Pine (<i>Pinus kesiya</i>) Forest in Bokod, Benguet	October 3, 2019	CorCAARRD
Mac James Dacillo	1 st Best Paper(Social Category)	Ensuring Intergenerational Tie: Digitizing Pidlisan Folktales to Multimedia- Based Learning System Applying Tragidital Framework	October 3, 2019	CorCAARRD
Joylin Alcidi, Mira Faith Ambugawon, Danice Bugarin, Jaren Lasaten	2 nd Best Paper (Social Category)	The Governance of Local Enterprise of Baguio City and La Trinidad, Benguet	October 3, 2019	CorCAARRD

UNIVERSITY STUDENT RESEARCH CONGRESS

Table 4. Award/Recognition During the 2019 University Research Student Congress

Awardee/s	Title of Award	Title of Research Paper	Date Received	Awarding Organization/ Conferring Body
Undergraduate level S & T category				
Krisler Wansi, Eunice Mejos, Engr. Genaro Macasieb (adviser)	Best Research Paper	“Design Fabrication and Performance Evaluation of a Motorized Oyster Crusher Machine”	June 7, 2019	BSU
Derek Bayer, Christine Parian, Ms. Nova Doyog. (adviser)	2 nd Place	“Aboveground Biomass Mapping of Benguet Pine (<i>Pinus kesiya</i>) Forest in Bokod Benguet”	June 7, 2019	BSU
Vanessa Rose Meana, Nazer Sarapeo Kimkiman, Engr. Alvin Dulay (adviser)	3 rd Place	“Design Fabrication and Performance Evaluation Fluidized Bed Coffee Roaster”	June 7, 2019	BSU
Undergraduate level Social Category				
Mac James Dacillo , Paul Joseph Nuval (adviser)	Best Research Paper	“Ensuring Intergenerational Tie: Digitizing Pidilisan Folktales to Multi-media Based Learning System Applying Tradigital Framework”	June 7, 2019	BSU
Justine P. Ayomen, Dr. Madeline Kingan (adviser)	2 nd Place	“Value Chain Analysis of Swine (<i>Sus scrofa</i>) in Sablan, Benguet”	June 7, 2019	BSU
Joylin Alcid, Mira Faith Ambugawon, Angeline Ballangan, Danice Bugarin, Jerren Lasaten, Dr. Renebeth Donguiz (adviser)	3 rd Place	“The Governance of Local Economic Enterprise of Baguio City, and La Trinidad, Benguet”	June 7, 2019	BSU
Graduate level Social category				
Russel Fitz Wadasen, Dr. Joel Lubrica(adviser)	Best Research Paper	“Teacher-made Narrative and Student’s Achievement, Retention and Interest in Grade 9 Chemistry”	June 7, 2019	BSU
Graduate level S & T category				
Merlyn Denesia, Dr. Denisa Domondon (adviser)	Best Research Paper	“Fungal Contaminants of Arabica Coffee (<i>Coffea arabica</i>) Cherries and Green Coffee Beans from Selected Growing Areas in the province of Benguet”	June 7, 2019	BSU

E. UTILITY MODEL APPLICATIONS

The BSU Intellectual Property Rights Office (IPRO) submitted 39 research outputs/technologies for Utility Model application to the Bureau of Patents, Intellectual Property Office Philippines.

Table 5. List of Utility Models Applied

	Title of Technology	Researchers	Date Filed for Patenting/UM	Application Number
1	A process for freeze dried whole strawberries	Jao-Jao A. Somyden, Lanie B. Bas-ilan, Rhea S. Contada , Pelin B. Belino, Johnabel T. Basatan, Ruda Fe A. Suanding	March 5, 2019	22019000298
2	A composition and process of making freeze-dried mulberries	Jao-Jao A. Somyden, Rhea S. Contada , Pelin B. Belino, Johnabel T. Basatan, Ruda Fe A. Suanding	May 10, 2019	22019000570
3	A method of buffalo fetal calf blood and serum extraction	Leo S. Laruan, Danilda Hufana-Duran, Virgilio D. Viernes, Ernesto P. Garillo, Peregrine G. Duran	May 10, 2019	22019000571
4	A composition for strawberry-pineapple jam	Jao-Jao A. Somyden, Rhea S. Contada , Ruda Fe A. Suanding	May 10, 2019	22019000572
5	A method of vacuum packing of dried peanut (Arachis Hypogaea) Kernels	Hilda L. Quindara	May 10, 2019	22019000573
6	Method and Device for Making Improved Dried Meat Product	John James F. Malamug, Junie Bryan T. Mayomis	June 25, 2019	22019000758
7	Biological Fungicide and Methods for Controlling Fusarium Wilt on Sweetpotato	Teresita D. Masangcay, Jophr L. Galian, Cynthia G. Kiswa	June 25, 2019	22019000759
8	A Composition for Making Freeze-Dried Guyabano	Jao-Jao A. Somyden, Rhea S. Contada, Pelin B. Belino, Johnabel T. Basatan, Ruda Fe A. Suanding	June 25, 2019	22019000760
9	A process for Making Freeze-Dried Guyabano	Jao-Jao A. Somyden, Elena C. Ganado, Rhea S. Contada, Pelin B. Belino, Johnabel T. Basatan, Ruda Fe A. Suanding	June 25, 2019	22019000761
10	Honey Dispenser	Paquito P. Untalan, Leo E. Kimbungan	June 25, 2019	22019000762
11	A Composition and Process of Making Polvoron Flavored with Freeze-Dried Strawberries	Jao-Jao A. Somyden, Melchor s. Lumiked, Ruda Fe A. Suanding	June 25, 2019	22019000763
12	A composition and for Making Red Dragon Fruit with Pineapple Jam	Jao-Jao A. Somyden, Dalifer a. Gano, Ruda Fe A. Suanding	June 25, 2019	22019000764
13	A Production Method of Toasting Shelled Peanuts	Hilda L. Quindara	June 25, 2019	22019000765
14	A Method for Making Shelf-Stable Fermented Heirloom Rice	Lesley Dale G. Umayat, Elizabeth T. Dom-Ogen, Norma P. Banania	June 25, 2019	22019000766
15	A Composition for Making Shelf-Stable Fermented Heirloom Rice	Lesley Dale G. Umayat, Elizabeth T. Dom-Ogen, Norma P. Banania	June 25, 2019	22019000767
16	A composition of making Sweet Potato Roots Lemon Juice	Esther T. Botangen, Hilda L. Quindara, Joyce K. Mama-o	September 16, 2019	22019001272
17	A composition of making Sweet Potato Tops Lemon Juice	Esther T. Botangen, Hilda L. Quindara, Joyce K. Mama-o	September 16, 2019	22019001273
18	A Motorized Oyster Shell Crusher Machine	Nazer Sarapeo P. Kimkiman, Vanessa Rose L. Meana, Alvin C. Dulay	November 11, 2019	12019000431

	Title of Technology	Researchers	Date Filed for Patenting/UM	Application Number
19	A Portable Batch Type Fluidized Bed Coffee	Eunice E. Mejos, Krisler M. Wansi, Genaro W. Macasieb	November 11, 2019	12019000430
20	Continuous-Fed Cocoon Deflossing Machine	Espino C. Tiw-An, Norma P. Ramos, Leonardo D. Dumalhin	November 11, 2019	12019000432
21	Local Wild Berries (Bugnay) Wine Cordilleran Pralines	Beverly Anne S. Camarillo, Kristoffer N. Dumanas	November 11, 2019	12019000434
22	Honey- Glazed Smoked-Meat Cordilleran Pralines	Beverly Anne S. Camarillo, Kristoffer N. Dumanas	November 11, 2019	12019000433
23	A Process of Making Basil Flavored Ice Cream	Jao-Jao A. Somyden, Rhea S. Contada, Pelin B. Belino, Johnabel T. Basatan, Ruda Fe T. Suanding	December 17, 2019	22019001610
24	A composition of making Basil Flavored Ice Cream	Jao-Jao A. Somyden, Rhea S. Contada, Pelin B. Belino, Johnabel T. Basatan, Ruda Fe T. Suanding	December 17, 2019	22019001617
25	A Composition for making Red Sugar beet Wine	Jaymar T. Palista, Kimberly P. Wag-e, Jao-Jao A. Somyden, Jafet T. Sungduan	December 17, 2019	22019001613
26	A Process for making Red Sugar beet Wine	Jaymar T. Palista, Kimberly P. Wag-e, Jafet T. Sungduan, Jao-Jao A. Somyden	December 17, 2019	22019001615
27	A Composition of Making Pigeon pea Flavored Ice cream	Karen S. Aroco, Jessica P. Binha-on, Jonalyn L. Cabbigat, Jao-Jao A. Somyden	December 17, 2019	22019001611
28	A Process of Making Pigeon pea Flavored Ice cream	Karen S. Aroco, Jessica P. Binha-on, Jonalyn L. Cabbigat, Jao-Jao A. Somyden	December 17, 2019	22019001609
29	A Composition for Making Ginger Flavored Polvoron	Leah Mae P. Banguete, Maricel T. Budoc, Ivy T. Litusken, Jao-Jao A. Somyden	December 17, 2019	22019001623
30	A Method For Regeneration Of Coffee Arabica Cultivar Typical Through Tissue Culture	Belinda A. Tad-awan, Milagros R. Dumaslan, Sheryl B. Manuel	December 17, 2019	22019001612
31	A Composition For Making Ginger-Turmeric Chewy Pastillas	Ruda Fe A. Suanding, Amy A. Ngalides, Rochelle R. Play, Jao-Jao A. Somyden	December 17, 2019	22019001614
32	Composition of Making Crackers Enriched with Vegetables and Root Crops	Violeta C. Salda, Jofrey Bayating	December 17, 2019	22019001618
33	Process of Making Crackers Enriched with Vegetables and Root Crops	Violeta C. Salda, Jofrey Bayating	December 17, 2019	22019001616
34	Sun-Dried Pork Bouillon Cubes	Cynthia Garambas	December 17, 2019	22019001620
35	Sun-Dried Liquid Seasoning	Cynthia Garambas	December 17, 2019	22019001622
36	Process of making powdered sun-dried pork	Cynthia Garambas	December 17, 2019	22019001621
37	Sun Dried Pork Granules	Cynthia Garambas	December 17, 2019	22019001619

	Title of Technology	Researchers	Date Filed for Patenting/UM	Application Number
38	A Vertical Disc Push Type Double-Row Carrot Seeder	Marvin T. Valentin, Romeo B. Gavino, Keithler M. Pagnas, Romualdo S. Bantag	December 17, 2019	12019000981
39	A Vertical Disc Push Type Five-Row Carrot Seeder	Marvin T. Valentin, Romeo B. Gavino, Keithler M. Pagnas, Romualdo S. Bantag	December 17, 2019	12019000982

F. PUBLICATIONS REGISTERED FOR COPYRIGHT PROTECTION

The BSU Intellectual Property Right Office was able to register a total of 152 creations/compositions in the form of instructional materials, manuals, books, journals and other creative works to the National Library of the Philippines.

Table 6. List of Publications Registered for Copyright Protection

	Title	Author/s	Class	Registration No.	Filing Date
1	How to Process Veggie Enriched Pancit Canton	Violeta C. Baldasan-Salda, Jofrey Bayating	(O) Brochure	O2019-673	March 5, 2019
2	How to Process Veggie Enriched Pandesal	Violeta C. Baldasan-Salda, Jofrey Bayating	(O) Brochure	O2019-6747	March 5, 2019
3	College of Teacher Education Extension Primer	Percyveranda A. Lubrica	(O) Primer	O2019-667	March 5, 2019
4	Northern Philippine Root Crops Research and Training Center Extension Primer	Hilda L. Quindara, Cynthia G. Kiswa	(O) Primer	O2019-672	March 5, 2019
5	School-Based Management By Benguet Public Secondary School Heads: An Impact Analysis	Percyveranda A. Lubrica, Manolita N. Alvaro, Ruth S. Batani, Jingle P. Cuevas, Alma Vida G. Gallardo, Dominador S. Garin, Imelda G. Parcasio	(O) Book	O2019-665	March 5, 2019
6	Talina-Ay Ti Panunut	Angeli T. Austria, Melody S. Walsi-En, Maricris P. Lad-Ey, Larry A. Ballogan, Jr., Irene A. Alcantara, Fay Ann P. Farangan	(O) Mnemonics	O2019-671	March 5, 2019
7	A guide on making homemade ice cream	Jao-Jao A. Somyden Rhea S. Contada Pelin B. Belino Johnabel T. Basatan Ruda Fe A. Suanding	(O) Pamphlet	O2019-675	March 5, 2019
8	Allawig	Nora C. Sagayo	(E) Dramatization	E2019-04	March 5, 2019

	Title	Author/s	Class	Registration No.	Filing Date
9	BSU Extension Briefer	Ruth S. Batani, Betty C. Listino, Ann Heather B. Kiwang, Nora C. Sagayo, Natividad R. Demot, Sherilyn Balauro, Christine Grace Fuchigami, Sergio T. Gayao, Casmir S. Ligat, Freddie L. Telesforo, Julie I. Calatan, John D. Dolinas, Jr., Maricel V. Dacnes, Annette D. Tanglib, Andrea Lyn B. Marzo	(O)Briefer	O2019-668	March 5, 2019
10	Ang mga anak ng lic-am	Delia Sudcaren, Paul Joseph A. Nuval, Faith Belingon	(L) Audio-Visual	L2019-210	March 5, 2019
11	Ayasak di minas(whispers from the mines)	Paul Joseph A. Nuval, Mark Samueld. De Guzman, Richard A. Giye, Arneil A. Dumigsi	(L) Audio-Visual	L2019-212	March 5, 2019
12	Biag ti usok	Jezebel L. Gumatay, Paul Joseph A. Nuval	(L) Audio-Visual	L2019-208	March 5, 2019
13	Bayani sa likod ng teachers camp	Paul Joseph A. Nuval, Mark Samuel D. De Guzman, Apolinario A. Bagano Jr., David Kidpo Jr.	(L) Audio-Visual	L2019-209	March 5, 2019
14	Sagisag	Paul Joseph A. Nuval, Mac James T. Dacillo, Desiree A. Esteban, Chamanei C. Elias, Dine Yve Daganos	(L)Audio-Visual	L2019-211	March 5, 2019
15	Strawberry Production Through Tissue Culture	Milagros R. Dumaslan	(O) Brochure	O2019-670	March 5, 2019
16	Farm Planning and Organic Agriculture Management Practices: A Training Manual	Jamesly T. Andres	(O) Brochure	O2019-669	March 5, 2019
17	Management of Potato Bacterial Wilt Kuyos/Dapog	Andres A.Basalong, Grace S. Backian, Teresita D. Masangcay, Jophr L Galian	(O)Brochure	O2019-666	March 5, 2019
18	Lecture Study Guide in VM 176 (Special Medicine)	Loretta C. Romero	(A) Instructional Material	A2019-598	March 5, 2019
19	VM 122 Systemic Pathology Laboratory Manual	Edlyn Mae N. Ciano	(A) Instructional Material	A2019-599	March 5, 2019
20	VM 121 General Pathology Laboratory Manual	Edlyn Mae N. Ciano	(A) Instructional Material	A2019-600	March 5, 2019
21	VM 121 General Pathology Lecture Study Guide	Edlyn Mae N. Ciano	(A) Instructional Material	A2019-601	March 5, 2019
22	Animal Breeding and Genetics Workbook	Monaliz M. Nagrampa	(A) Instructional Material	A2019-602	March 5, 2019
23	Lecture Manual On Ruminant Health And Production	Joseph A. Dianso	(A) Instructional Material	A2019-603	March 5, 2019

	Title	Author/s	Class	Registration No.	Filing Date
24	V20021 General Zoology Laboratory Manual	Monaliz M. Nagrampa	(A) Instructional Material	A2019-604	March 5, 2019
25	Ingenious Concepts in Sewing	Violeta B. Bugtong	(A) Instructional Material	A2019-605	March 5, 2019
26	Indigenous and Wild Edible Plant Species in the Highlands of Cordillera Region, Philippines	Joyce N. Paing, Romeo A. Gomez, Jr., Ronnel V. Pontino	(O)Research output	A2019-606	March 5, 2019
27	Transformation of a Mountain School: A History of BSU, 1945-1986	Stanley F. Anongos Jr.	(A) Instructional Material	A2019-607	March 5, 2019
28	Trinidad Agricultural School, 1916-1941	Stanley F. Anongos Jr.	(A) Instructional Material	A2019-608	March 5, 2019
29	Laboratory Manual In Gross Anatomy 2 (Comparative Anatomy)	Ruth C. Diego Ana B. Mendoza Jocelyn M. Runas Maureen P. De Vera	(A) Instructional Material	A2019-609	March 5, 2019
30	VM 112 Pathogenic Microbiology and Mycology Laboratory Manual	Edlyn Mae N. Ciano	(A) Instructional Material	A2019-610	March 5, 2019
31	Research in Elementary Education	Desiree F. Botengan, Divina M. Yango	(A) Instructional Material	A2019-611	March 5, 2019
32	BSU-CVM Research Manuscript Manual Of Form & Style	Loretta C. Romero, Ana B. Mendoza	(A) Instructional Material	A2019-612	March 5, 2019
33	Laboratory Manual in Zootechnics 12(Principles of Animal Nutrition)	Ana B. Mendoza Monaliz M. Nagrampa Loretta C. Romero	(A) Instructional Material	A2019-613	March 5, 2019
34	Laboratory Manual in Veterinary Theriogenology	Ana B. Mendoza	(A) Instructional Material	A2019-614	March 5, 2019
35	Laboratory Manual in Veterinary Systemic Physiology	Ana B. Mendoza	(A) Instructional Material	A2019-615	March 5, 2019
36	Laboratory Manual in Veterinary Endocrinology and Reproductive Physiology	Ana B. Mendoza	(A) Instructional Material	A2019-616	March 5, 2019
37	Laboratory Manual in Veterinary Pharmacology and Therapeutics 1 (Basic Pharmacology)	Ana B. Mendoza	(A) Instructional Material	A2019-617	March 5, 2019
38	Laboratory Manual in Veterinary Pharmacology and Therapeutics II (Clinical Pharmacology)	Ana B. Mendoza	(A) Instructional Material	A2019-618	March 5, 2019
39	Techno Guide Fermented Rice Making	Lesley Dale G. Umayat, Norma P. Banania, & Elizabeth T. Dom-Ogen	(A) Instructional Material	A2019-620	May 10, 2019
40	Gross Anatomy Of The Dog Laboratory Manual	Ruth C. Diego, Ana B. Mendoza, Jocelyn M. Runas & Maureen P. De Vera	(A) Instructional Material	A2019-621	May 10, 2019

	Title	Author/s	Class	Registration No.	Filing Date
41	Instructional Manual In Food Processing	Lesley Dale G. Umayat	(A) Instructional Material	A2019-622	May 10, 2019
42	Vm 13 Veterinary Virology Lecture Study Guide	Edlyn Mae N. Ciano	(A) Instructional Material	A2019-623	May 10, 2019
43	Vm 122 Systemic Pathology Lecture Study Guide	Edlyn Mae N. Ciano	(A) Instructional Material	A2019-624	May 10, 2019
44	Vm 143 Special Parasitology	Criselda S. Battad	(A) Instructional Material	A2019-625	May 10, 2019
45	Nd 114 Nutrition In The Life Stages	Imelda O. Degay	(A) Instructional Material	A2019-626	May 10, 2019
46	Classroom Management Practical Ideas For Preschool Teachers	Marcelina L. Bolona	(A) Instructional Material	A2019-627	May 10, 2019
47	Database On Organic Agriculture In Benguet	Jovita M. Sim & Teresa B. Bocales	(A) Instructional Material	A2019-628	May 10, 2019
48	Database On Organic Agriculture In Mountain Province	Jovita M. Sim & Teresa B. Bocales	(A) Instructional Material	A2019-629	May 10, 2019
49	Communication Arts In The Elementary	Alexandra S. Sad-Ang	(A) Instructional Material	A2019-630	May 10, 2019
50	Devc141 Visual Planning, Design And Production	Michelle B. Gatab-Laruan & Igrelyn P. Pinos-An	(A) Instructional Material	A2019-631	May 10, 2019
51	Devc141 Visual Design And Techniques	Igrelyn P. Pinos-An	(A) Instructional Material	A2019-632	May 10, 2019
52	Devc142 Visual Aids Planning And Production (Lecture Manual)	Michelle B. Gatab-Laruan	(A) Instructional Material	A2019-633	May 10, 2019
53	Devc142 Visual Aids Planning And Production (Laboratory Manual)	Michelle B. Gatab-Laruan	(A) Instructional Material	A2019-634	May 10, 2019
54	Devc142 Learning Module Development (Lecture Manual)	Igrelyn P. Pinos-An	(A) Instructional Material	A2019-635	May 10, 2019
55	Devc190 Communication Internship (2015 Edition)	Gretchen Shagami C. Hudson & Igrelyn P. Pinos-An	(A) Instructional Material	A2019-636	May 10, 2019
56	Visual Communication And Design	Igrelyn P. Pinos-An	(A) Instructional Material	A2019-637	May 10, 2019
57	Devc102 Writing For Educational Communication Media (Laboratory Manual)	Michelle Gatab-Laruan & Christine Grace S. Fuchigami	(A) Instructional Material	A2019-638	May 10, 2019
58	Observational Child Study	Evelyn Santos Angiwan	(A) Instructional Material	A2019-639	May 10, 2019

	Title	Author/s	Class	Registration No.	Filing Date
59	Guidance And Counselling In The Elementary	Evelyn Santos Angiwan	(A) Instructional Material	A2019-640	May 10, 2019
60	Preschool Curriculum 1	Evelyn Santos Angiwan	(A) Instructional Material	A2019-641	May 10, 2019
61	Preschool Curriculum 2	Evelyn Santos Angiwan	(A) Instructional Material	A2019-642	May 10, 2019
62	Benguet State University	Kara S. Panolong, Jennyline S. Tabangcura & Mark Samuel De Guzman	(A)Book	A2019-643	May 10, 2019
63	Devc124 Advanced Development And Multimedia Writing (Lecture Manual)	Paul Joseph A. Nuval & Joahna G. Goyagoy	(A) Instructional Material	A2019-644	May 10, 2019
64	Devc130 Broadcast Speech And Performance (First Edition)	Michelle B. Gatab-Laruan & Anna Liza B. Wakat	(A) Instructional Material	A2019-645	May 10, 2019
65	Devc130 Broadcast Speech And Performance (Second Edition)	Michelle B. Gatab-Laruan & Anna Liza B. Wakat	(A) Instructional Material	A2019-646	May 10, 2019
66	Devc160 Multimedia Production (Laboratory Manual)	Michelle B. Gatab-Laruan	(A) Instructional Material	A2019-647	May 10, 2019
67	Radio And Television Production	Michelle B. Gatab-Laruan	(A) Instructional Material	A2019-648	May 10, 2019
68	Devc60 Interpersonal Communication In Development	Igrelyn P. Pinos-An & Anna Liza B. Wakat	(A) Instructional Material	A2019-649	May 10, 2019
69	Devc70 Communication Society	Devc70 Communication Society	(A) Instructional Material	A2019-650	May 10, 2019
70	Devc180 Strategic Communication And Development (Second Edition)	Christine Grace S. Fuchigami & Anna Liza B. Wakat	(A) Instructional Material	A2019-651	May 10, 2019
71	Devc190 Communication Internship Program (2017 Edition)	Gretchen Shagami C. Hudson & Igrelyn P. Pinos-An	(A) Instructional Material	A2019-652	May 10, 2019
72	Devc190 Communication Internship Program (2018 Edition)	Gretchen Shagami C. Hudson, Paul Joseph A. Nuval & Igrelyn P. Pinos-An	(A) Instructional Material	A2019-653	May 10, 2019
73	SSS3 Training Program Management (Lecture Manual)	Paul Joseph A. Naval & Joahna G. Goyagoy	(A) Instructional Material	A2019-654	May 10, 2019
74	Things You Need To Know About Student Teaching	Apler J. Bansiong	(A) Instructional Material	A2019-655	May 10, 2019
75	Assessment Of Student Learning I	Apler J. Bansiong	(A) Instructional Material	A2019-656	May 10, 2019
76	A Beginner's Guide To Science Research	Apler J. Bansiong	(A) Instructional Material	A2019-657	May 10, 2019

	Title	Author/s	Class	Registration No.	Filing Date
77	Zoot 14 Poultry Health And Production Laboratory Manual	Karen B. Gaerlan & Joseph A. Dianso	(A) Instructional Material	A2019-658	May 10, 2019
78	Zoot 15-Swine Health And Production Laboratory Manual	Richard P. Dumapis & Karen B. Gaerlan	(A) Instructional Material	A2019-659	May 10, 2019
79	Zoot 16 Ruminant Health And Production Laboratory Manual	Richard P. Dumapis	(A) Instructional Material	A2019-660	May 10, 2019
80	Vm 181 Principles Of Veterinary Surgery Laboratory Manual	Richard P. Dumapis	(A) Instructional Material	A2019-661	May 10, 2019
81	Vm 183 Large Animal Surgery Laboratory Manual	Richard P. Dumapis	(A) Instructional Material	A2019-662	May 10, 2019
82	Public Health Nutrition Laboratory Manual	Pelin B. Belino	(A) Instructional Material	A2019-663	May 10, 2019
83	The Art Works	Julius B. Dominguez	(G) painting	G2019-26	May 10, 2019
84	Flower Vase W/ Spottering	Julius B. Dominguez	(G) painting	G2019-27	May 10, 2019
85	Forever Young	Julius B. Dominguez	(G) painting	G2019-28	May 10, 2019
86	Joseph And Mary	Julius B. Dominguez	(G) painting	G2019-29	May 10, 2019
87	Little Green Valley	Julius B. Dominguez	(G) painting	G2019-30	May 10, 2019
88	My Favorite Flowers	Julius B. Dominguez	(G) painting	G2019-31	May 10, 2019
89	My Perfect Home	Julius B. Dominguez	(G) painting	G2019-32	May 10, 2019
90	My Simple Home	Julius B. Dominguez	(G) painting	G2019-33	May 10, 2019
91	Peace On Earth	Julius B. Dominguez	(G) painting	G2019-34	May 10, 2019
92	The Perfect Cone	Julius B. Dominguez	(G) painting	G2019-35	May 10, 2019
93	The Play Boy	Julius B. Dominguez	(G) painting	G2019-36	May 10, 2019
94	Red & Blue Flower	Julius B. Dominguez	(G) painting	G2019-37	May 10, 2019
95	The Red Flower Vase	Julius B. Dominguez	(G) painting	G2019-38	May 10, 2019
96	Save The Mother Earth	Julius B. Dominguez	(G) painting	G2019-39	May 10, 2019
97	The Secret Admirer	Julius B. Dominguez	(G) painting	G2019-40	May 10, 2019
98	The Silent Place	Julius B. Dominguez	(G) painting	G2019-41	May 10, 2019
99	The Silver Flowers	Julius B. Dominguez	(G) painting	G2019-42	May 10, 2019
100	To Someone Special	Julius B. Dominguez	(G) painting	G2019-43	May 10, 2019
101	The 3 Flowers	Julius B. Dominguez	(G) painting	G2019-44	May 10, 2019
102	The 3 Roses	Julius B. Dominguez	(G) painting	G2019-45	May 10, 2019
103	Adal Ya Kinabaknang	Julius B. Dominguez	(O) song	O2019-1978	May 10, 2019
104	Anos Mi Et Din-Dinan Mi	Julius B. Dominguez	(O) song	O2019-1979	May 10, 2019
105	Bilin Da Inam En Amam Ay Tinalikudam	Julius B. Dominguez	(O) song	O2019-1980	May 10, 2019
106	Chismosa	Julius B. Dominguez	(O) song	O2019-1981	May 10, 2019
107	Dakami Ay Kababa-An	Julius B. Dominguez	(O) song	O2019-1982	May 10, 2019

	Title	Author/s	Class	Registration No.	Filing Date
108	Lugar Tako Ay Kabenguetan	Julius B. Dominguez	(O) song	O2019-1983	May 10, 2019
109	Nateng Ay Mula Mi	Julius B. Dominguez	(O) song	O2019-1984	May 10, 2019
110	Palalo Di Radsak Na	Julius B. Dominguez	(O) song	O2019-1985	May 10, 2019
111	Si Sak-En Di Pinilim	Julius B. Dominguez	(O) song	O2019-1986	May 10, 2019
112	Urnos Day Umili	Julius B. Dominguez	(O) song	O2019-1987	May 10, 2019
113	Sociology Of Development	Constantino T. Sudaypan	(A) Instructional Material	A2019-863	June 25, 2019
114	Laboratory Manual In Housekeeping Procedures	Amelia G. Bawang	(A) Instructional Material	A2019-864	June 25, 2019
115	Principles Of Teaching 2 (The Sciences)	Apler J. Bansiong	(A) Instructional Material	A2019-865	June 25, 2019
116	Assessment Of Student Learning 2	Apler J. Bansiong	(A) Instructional Material	A2019-866	June 25, 2019
117	Laboratory Manual: Fundamentals In Food Technology	Jao-Jao A. Somyden	(A) Instructional Material	A2019-867	June 25, 2019
118	VM 103 (Developmental Anatomy) Laboratory Manual	Jocelyn M. Runas	(A) Instructional Material	A2019-868	June 25, 2019
119	VM 104 (Microscopic Anatomy) Laboratory Manual	Jocelyn M. Runas	(A) Instructional Material	A2019-869	June 25, 2019
120	Laboratory Manual In Bread And Pastry Production	Rodeliza A. Flores	(A) Instructional Material	A2019-870	June 25, 2019
121	Convention And Events Management Laboratory Manual	Rochelle B. Quintos	(A) Instructional Material	A2019-871	June 25, 2019
122	Devc134: Introduction To Telecommunication For Development (Lecture Manual)	Nora C. Sagayo	(A) Instructional Material	A2019-872	June 25, 2019
123	Devc134: Introduction To Telecommunication For Development (Laboratory Manual)	Nora C. Sagayo	(A) Instructional Material	A2019-873	June 25, 2019
124	Mythology And Folklore	Leonard T. Apilis	(A) Instructional Material	A2019-874	June 25, 2019
125	Philosophy Of Man	Leonard T. Apilis	(A) Instructional Material	A2019-875	June 25, 2019
126	Professional Communication	Leonard T. Apilis	(A) Instructional Material	A2019-876	June 25, 2019
127	ESL230 Philosophical Foundation Of Language Instruction	Leonard T. Apilis	(A) Instructional Material	A2019-877	June 25, 2019

	Title	Author/s	Class	Registration No.	Filing Date
128	Technical Writing For Bachelor Of Science In Industrial Technology	Shakira B. Herman	(A) Instructional Material	A2019-878	June 25, 2019
129	Advance Garment Construction And Adjustment Techniques	Violeta B. Bugtong	(A) Instructional Material	A2019-880	June 25, 2019
130	Laboratory And Field Exercises In Phytoneumatology	Nordalyn B. Pedroche & Luciana M. Villanueva	(A) Instructional Material	A2019-881	September 16, 2019
131	Chemistry Achievement Test (Cat)	Luisita L. Ely	(A) Instructional Material	A2019-882	September 16, 2019
132	Module On Carbon Compounds	Luisita L. Ely	(A) Instructional Material	A2019-883	September 16, 2019
133	Module On Chemical Bonding	Luisita L. Ely	(A) Instructional Material	A2019-884	September 16, 2019
134	Module On The Mole Concept	Luisita L. Ely	(A) Instructional Material	A2019-885	September 16, 2019
135	"Empowering Farmers' On The Seed Production Of Nsic Approved Potato Varieties In Benguet And Mt. Province"	Ines C. Gonzales, Cynthia G. Kiswa & Teresita D. Masangcay	(A)Book	A2019-886	September 16, 2019
136	Ex-Vitro Acclimatization Of Micropropagated Callas	Leila Mary A. Ayban, Jemma Rose M. Kilakil, Aracelli G. Ladilad, Nemie A. Chamollog And Phillip Tom B. Asi-As	(O)Brochure	O2019-3481	September 16, 2019
137	Acclimatization Of Micropropagated Anthurium Andreanum Cv. Acropolis	Leila Mary A. Ayban, Jemma Rose M. Kilakil, Aracelli G. Ladilad, Nemie A. Chamollog And Phillip Tom B. Asi-As	(O)Brochure	O2019-3482	September 16, 2019
138	Ex-Vitro Acclimatization Of In-Vitro Propagated Chrysanthemums	Leila Mary A. Ayban, Jemma Rose M. Kilakil, Aracelli G. Ladilad, Nemie A. Chamollog And Phillip Tom B. Asi-As	(O)Brochure	O2019-3483	September 16, 2019
139	Good practice options in Soil Management for Cabbage, Carrot and Potato	Alexander W. Fagyan	(A)Book	A2019-1021	September 16, 2019
140	Good practice options in production for Cabbage, Carrot and Potato	Belinda A. Tad-awan	(A)Book	A2019-1020	September 16, 2019
141	Pagbasa at Pagsulat Tungo sa Pananaliksik	Joan S. Inluban	(A)Book	A2019-1019	September 16, 2019
142	Assessment Field, Validation and Documentation of Evidence-Based Ecosystem Adaptation Measures with Potential for Scaling-Up In Indigenous Cultural Communities	Ruth Sidchogan-Batani, Romeo A. Gomez, Jr., Cheryll C. Launio, Betty C. Listino	(O)Research Output	O2019-4064	September 16, 2019
143	Orange Fleshed Sweetpotato as Source of Nutrition and Income in Vitamin A Deficiency Areas in the Cordillera Region	Ines C. Gonzales. Hilda L. Quindara, Isidro B. Awal, Esther T. Botangen, Roger T.	(O)Research Output	O2019-4062	September 16, 2019

	Title	Author/s	Class	Registration No.	Filing Date
		Gayumba, Pelin B. Belino, Ruth S. Batani			
144	Adal sin Dagem (Lessons From Air)	Christine Grace S. Fuchigami, Jamar C. Garcia, Ruth S. Batani	(O) Documentary	O2019-4067	September 16, 2019
145	Good Practice Options in Insect Management for Cabbage, Carrot and Potato	Andres A. Basalong	(O)Research Output	O2019-4065	September 16, 2019
146	A supplemental guide for BSU-Technology and Innovation Menu in Climate Change Mitigation and Adaptation	Bonie S. Ligat			
147	National Conference Agri-Aqua Technology Business Incubation	Erlinda B. Alupias, Gemma S. Das-Ilen, Ruth C. Diego, Richard P. Dumapis, Ana B. Mendoza, Monaliz M. Nagrampa	(O)Journal	O2019-4066	September 16, 2019
148	Varietal Evaluation and Selection of Salad Type Tomato Under Conventional Production in the Highlands	Amelia M. Kimeu Remegio T. Calayan	(O)Research Output	O2019-4061	September 16, 2019
149	Techno Guide for Agricultural Practices (GAP) on Spray-Type Chrysanthemum Production	Carlito P. Laurean, Teresita K. Mangili	(O)Research Output	O2019-4063	September 16, 2019
150	A Small Holder Agribusiness Incubation Story: BSU ATBI/IC Creating Agripreneurs	Ruth C. Diego	(L)Audio-Visual	L2019-394	November 11, 2019
151	Biological indexing of tissue-cultured strawberry through leaf grafting	Milagros R. Dumaslan	(O)Research Output	O2019-5106	November 11, 2019
152	Production of 'Lollo Rossa' Lettuce using Low Tunnel and Mulch under Frost-struck Area in Paoay, Atok, Benguet	Darwin A. Basquial	(O)Brochure	O2019-5105	November 11, 2019

G. PUBLICATIONS REGISTERED FOR ISBN/ISSN

A total of 96 publications were registered for ISBN and ISSN.

Table 7. List of Publications Registered for ISBN/ISSN

	Title	Author/s	Class	Registration No.	Filing Date
1	MJSIR Handbook	REPO		978-971-006-246-1	March 5, 2019
2	Professional Communication	Leonard T. Apilis	(A) Instructional Material	978-971-006-302-4	May 10, 2019
3	Mythology and Folklore	Leonard T. Apilis	(A) Instructional Material	978-971-006-299-7	May 10, 2019

	Title	Author/s	Class	Registration No.	Filing Date
4	Philosophy of Man	Leonard T. Apilis	(A) Instructional Material	978-971-006-300-0	May 10, 2019
5	ESL230 Philosophical Foundation of Language Instruction	Leonard T. Apilis	(A) Instructional Material	978-971-006-301-7	May 10, 2019
6	Manual in the Life, Works and Writings of Dr. Jose Rizal	Jennie M. Bito	(A) Instructional Material	978-971-006-297-3	May 10, 2019
7	Technical Writing and Professional Communication	Evangeline Rachel D. Leaño	(A) Instructional Material	978-971-006-316-1	May 10, 2019
8	Philippine Literature (Literature II)	Evangeline Rachel D. Leaño	(A) Instructional Material	978-971-006-315-4	May 10, 2019
9	Instructional Manual in Effective Speech English 13	Evangeline Rachel D. Leaño	(A) Instructional Material	978-971-006-314-7	May 10, 2019
10	Teaching Listening and Reading English Education 110	Evangeline Rachel D. Leaño	(A) Instructional Material	978-971-006-313-0	May 10, 2019
11	Study and Thinking Skills Communication Arts 1 English II	Evangeline Rachel D. Leaño	(A) Instructional Material	978-971-006-317-8	May 10, 2019
12	World Literature (Lit 12)	Evangeline Rachel D. Leaño	(A) Instructional Material	978-971-006-312-3	May 10, 2019
13	Philippine Literature in English	Karen O. Laking	(A) Instructional Material	978-971-006-250-8	May 10, 2019
14	Philippine Literature	Karen O. Laking	(A) Instructional Material	978-971-006-256-0	May 10, 2019
15	Poetry	Karen O. Laking	(A) Instructional Material	978-971-006-251-5	May 10, 2019
16	(Filipino Education 105) Mga Estratehiya Sa Pagtuturo ng Wikang Filipino	Janet B. Mede	(A) Instructional Material	978-971-006-253-9	May 10, 2019
17	(Filipino Education 114) Maikling Kwento at Nobela	Janet B. Mede	(A) Instructional Material	978-971-006-254-6	May 10, 2019
18	(Filipino II) Komunikasyon Sa Akademikong Filipino	Janet B. Mede	(A) Instructional Material	978-971-006-255-3	May 10, 2019
19	Communication Arts in the Elementary	Alexandra S. Sad-Ang	(A) Instructional Material	978-971-006-267-6	May 10, 2019
20	Transformation of a Mountain School: A History of BSU, 1945-1986	Stanley F. Anongos Jr.	(A) Instructional Material	978-971-006-266-9	May 10, 2019
21	Trinidad Agricultural School, 1916-1941	Stanley F. Anongos Jr., Tecah C. Sagandoy	(A) Instructional Material	978-971-006-263-8	May 10, 2019
22	(Filipino Education 115) Panulaang Filipino	Janet B. Mede	(A) Instructional Material	978-971-006-252-2	May 10, 2019
23	Istruktura Ng Wikang Filipino (Fil. Ed. 104)	Mitche A. Aglasi	(A) Instructional Material	978-971-006-261-4	May 10, 2019
24	Assessment Of Student Learning I	Apler J. Bansiong	(A) Instructional Material	978-971-006-270-6	May 10, 2019
25	A Beginner's Guide To Science Research	Apler J. Bansiong	(A) Instructional Material	978-971-006-268-3	May 10, 2019

	Title	Author/s	Class	Registration No.	Filing Date
26	Things You Need to Know About Student Teaching	Apler J. Bansiong	(A) Instructional Material	978-971-006-269-0	May 10, 2019
27	Preschool Curriculum 1	Evelyn Santos Angiwan	(A) Instructional Material	978-971-006-296-6	May 10, 2019
28	Preschool Curriculum 2	Evelyn Santos Angiwan	(A) Instructional Material	978-971-006-307-9	May 10, 2019
29	Guidance and Counselling in the Elementary	Evelyn Santos Angiwan	(A) Instructional Material	978-971-006-292-8	May 10, 2019
30	Observational Child Study	Evelyn Santos Angiwan	(A) Instructional Material	978-971-006-288-1	May 10, 2019
31	Research in Elementary Education	Desiree F. Botengan, Divina M. Yango	(A) Instructional Material	978-971-006-260-7	May 10, 2019
32	Classroom Management Practical Ideas for Pre-School Teachers	Marcelina L. Bolona	(A) Instructional Material	978-971-006-289-8	May 10, 2019
33	Database on Organic Agriculture in Mountain Province	Jovita M. Sim, Teresa B. Bocales	(A) Instructional Material	978-971-006-291-1	May 10, 2019
34	Database on Organic Agriculture in Benguet	Jovita M. Sim, Teresa B. Bocales	(A) Instructional Material	978-971-006-290-4	May 10, 2019
35	Instructional Manual in Food Processing	Lesley Dale G. Umayat	(A) Instructional Material	978-971-006-247-8	May 10, 2019
36	ND 114 Nutrition in the Life Stages	Imelda O. Degay	(A) Instructional Material	978-971-006-262-1	May 10, 2019
37	Public Health Nutrition Laboratory Manual	Pelin B. Belino	(A) Instructional Material	978-971-006-248-5	May 10, 2019
38	Animal Breeding and Genetics Workbook	Monaliz M. Nagrampa	(A) Instructional Material	978-971-006-310-9	May 10, 2019
39	V20021 General Zoology Laboratory Manual	Monaliz M. Nagrampa	(A) Instructional Material	978-971-006-249-2	May 10, 2019
40	Laboratory Manual in Veterinary General Physiology	Ana B. Mendoza	(A) Instructional Material	978-971-006-258-4	May 10, 2019
41	Laboratory Manual in Veterinary Systemic Physiology	Ana B. Mendoza	(A) Instructional Material	978-971-006-295-9	May 10, 2019
42	Laboratory Manual in Veterinary Endocrinology and Reproductive Physiology	Ana B. Mendoza	(A) Instructional Material	978-971-006-275-1	May 10, 2019
43	Laboratory Manual in Veterinary Pharmacology and Therapeutics II (Clinical Pharmacology)	Ana B. Mendoza	(A) Instructional Material	978-971-006-273-7	May 10, 2019
44	Laboratory Manual in Veterinary Pharmacology and Therapeutics (Basic Pharmacology)	Ana B. Mendoza	(A) Instructional Material	978-971-006-278-2	May 10, 2019
45	Laboratory Manual in Veterinary Theriogenology	Ana B. Mendoza	(A) Instructional Material	978-971-006-276-8	May 10, 2019

	Title	Author/s	Class	Registration No.	Filing Date
46	Laboratory Manual In Gross Anatomy 2 (Comparative Anatomy)	Ruth C. Diego Ana B. Mendoza Jocelyn M. Runas Maureen P. De Vera	(A) Instructional Material	978-971-006-311-6	May 10, 2019
47	Laboratory Manual in Zootechnics 12(Principles of Animal Nutrition)	Ana B. Mendoza Monaliz M. Nagrampa Loretta C. Romero	(A) Instructional Material	978-971-006-274-4	May 10, 2019
48	Bsu-Cvm Research Manuscript Manual of Form & Style	Loretta C. Romero Ana B. Mendoza	(A) Instructional Material	978-971-006-277-5	May 10, 2019
49	Gross Anatomy of The Dog Laboratory Manual	Ruth C. Diego Ana B. Mendoza Jocelyn M. Runas Maureen P. De Vera	(A) Instructional Material	978-971-006-271-3	May 10, 2019
50	Laboratory Manual on Poultry Production & Health	Karen B. Gaerlan, Joseph A. Dianso	(A) Instructional Material	978-971-006-282-9	May 10, 2019
51	Lecture Manual on Ruminant Production and Health	Joseph A. Dianso	(A) Instructional Material	978-971-006-294-2	May 10, 2019
52	Lecture Study Guide in VM 176 (Special Medicine)	Loretta C. Romero	(A) Instructional Material	978-971-006-259-1	May 10, 2019
53	VM 112 Pathogenic Microbiology and Mycology Laboratory Manual	Edlyn Mae N. Ciano	(A) Instructional Material	978-971-006-281-2	May 10, 2019
54	VM 121 General Pathology Laboratory Manual	Edlyn Mae N. Ciano	(A) Instructional Material	978-971-006-272-0	May 10, 2019
55	VM 121 General Pathology Lecture Study Guide	Edlyn Mae N. Ciano	(A) Instructional Material	978-971-006-279-9	May 10, 2019
56	VM 122 Systemic Pathology Laboratory Manual	Edlyn Mae N. Ciano	(A) Instructional Material	978-971-006-298-0	May 10, 2019
57	VM 122 Systemic Pathology Lecture Study Guide	Edlyn Mae N. Ciano	(A) Instructional Material	978-971-006-284-3	May 10, 2019
58	VM 113 Veterinary Virology Lecture Study Guide	Edlyn Mae N. Ciano	(A) Instructional Material	978-971-006-286-7	May 10, 2019
59	VM 143 Special Parasitology	Criselda S. Battad	(A) Instructional Material	978-971-006-280-5	May 10, 2019
60	VM 181 Principles of Veterinary Surgery Laboratory Manual	Richard P. Dumapis	(A) Instructional Material	978-971-006-303-1	May 10, 2019
61	ZOOT I6 Ruminant Health and Production Laboratory Manual	Richard P. Dumapis	(A) Instructional Material	978-971-006-305-5	May 10, 2019
62	VM 183 Large Animal Surgery Laboratory Manual	Richard P. Dumapis	(A) Instructional Material	978-971-006-287-4	May 10, 2019
63	VM 103 (Developmental Anatomy) Laboratory Manual	Jocelyn M. Runas	(A) Instructional Material	978-971-006-264-5	May 10, 2019
64	VM 104 (Microscopic Anatomy) Laboratory Manual	Jocelyn M. Runas	(A) Instructional Material	978-971-006-265-2	May 10, 2019
65	Ingenious Concepts in Sewing	Violeta B. Bugtong	(A) Instructional Material	978-971-006-304-8	May 10, 2019

	Title	Author/s	Class	Registration No.	Filing Date
66	Panitikan Ng Pilipinas Unang Semestre Ng Panuruang Taon	Mitche A. Aglasi	(A) Instructional Material	978-971-006-308-6	May 10, 2019
67	Zoot 14 Poultry Health and Production Laboratory Manual	Karen B. Gaerlan, Joseph A. Dianso	(A) Instructional Material	978-971-006-306-2	May 10, 2019
68	Ethics	Noel S. Pariñas	(A) Instructional Material	978-971-006-293-5	May 10, 2019
69	Chemistry Achievement Test	Luisita L. Ely	(A) Instructional Material	978-971-006-324-6	June 25, 2019
70	Module on Carbon Compounds	Luisita L. Ely	(A) Instructional Material	978-971-006-323-9	June 25, 2019
71	Module on Chemical Bonds	Luisita L. Ely	(A) Instructional Material	978-971-006-325-3	June 25, 2019
72	Module on Mole Concept	Luisita L. Ely	(A) Instructional Material	978-971-006-322-2	June 25, 2019
73	Convention and Events Management Laboratory	Rochelle B. Quintos	(A) Instructional Material	978-971-006-326-0	June 25, 2019
74	Laboratory Manual in Housekeeping Procedures	Amelia G. Bawang	(A) Instructional Material	978-971-006-327-7	June 25, 2019
75	Laboratory Manual: Fundamentals in Food Technology	Jao-Jao A. Somyden	(A) Instructional Material	978-971-006-328-4	June 25, 2019
76	Laboratory Manual in Bread and Pastry Production	Rodeliza A. Flores	(A) Instructional Material	978-971-006-330-7	June 25, 2019
77	Empowering farmers' on the Seed Production of NSIC Approved Potato Varieties in Benguet and Mt. Province	Ines C. Gonzales, Cynthia G. Kiswa, Teresita D. Masangcay	(A) Instructional Material	978-971-006-331-4	June 25, 2019
78	DEVC134: Introduction to Telecommunication for Development (Lecture Manual)	Nora C. Sagayo	(A) Instructional Material	978-971-006-332-1	June 25, 2019
79	DEVC134: Introduction to Telecommunication for Development (Laboratory Manual)	Nora C. Sagayo	(A) Instructional Material	978-971-006-333-8	June 25, 2019
80	Advance Garment Construction and Adjustment Techniques	Violeta B. Bugtong	(A) Instructional Material	978-971-006-309-3	June 25, 2019
81	Technical Writing for Bachelor of Science in Industrial Technology	Shakira B. Herman	(A) Instructional Material	978-971-006-282-9	June 25, 2019
82	Pagbasa at Pagsulat Tungo sa Pananaliksik	Joan S. Inluban	(A) Instructional Material	978-971-006-266-9	June 25, 2019
83	Indigenous and Wild Edible Plant Species in the Highlands of Cordillera Region, Philippines	Joyce N. Paing, Romeo A. Gomez, Jr., Ronnel V. Pontino	(A) Instructional Material	978-971-006-329-1	June 25, 2019

	Title	Author/s	Class	Registration No.	Filing Date
84	Contextualizing Teaching Practices in a Diversified Classroom: An Assessment	Percyveranda A. Lubrica, Janet Lynn S. Montemayor, Janet Lynn S. Montemayor, Arnulfo C. Capili, Evelyn S. Angiwan	(O) Book	978-971-006-319-2	June 25, 2019
85	School-Based Management by Benguet Public Secondary School Heads: An Impact Analysis	Percyveranda A. Lubrica, Manolita N. Alvaro, Ruth S. Batani, Jingle P. Cuevas, Alma Vida G. Gallardo, Dominador S. Garin, Imelda G. Parcasio	(O) Book	978-971-006-320-8	June 25, 2019
86	Influence of the State Universities and Colleges Accreditation to the Educational Management to the Institution	Percyveranda A. Lubrica Desiree F. Botengan Esper L. Feliciano Froilan B. Manas	(O) Manual	978-971-006-321-5	June 25, 2019
87	Laboratory and field Exercises in Phytoneumatology	Nordalyn B. Pedroche, Luciana M. Villanueva	(A) Instructional Material	978-971-006-318-5	June 25, 2019
88	Sociology of Development	Constantino T. Sudaypan	(A) Instructional Material	978-971-006-336-9	June 25, 2019
89	Assessment of Student Learning2	Apler J. Bansiong	(A) Instructional Material	978-971-006-335-2	June 25, 2019
90	Assessment Field, Validation and Documentation of Evidence-Based Ecosystem Adaptation Measures with Potential for Scaling-Up In Indigenous Cultural Communities	Ruth Sidchogan-Batani, Romeo A. Gomez, Jr., Cheryll C. Launio Betty C. Listino	(A) Research Output	978-971-006-337-6	June 25, 2019
91	Orange Fleshed Sweetpotato as Source of Nutrition and Income in Vitamin A Deficiency Areas in the Cordillera Region	Ines C. Gonzales. Hilda L. Quindara, Isidro B. Awal, Esther T. Botangen, Roger T. Gayumba, Pelin B. Belino, Ruth S. Batani	(A) Research Output	978-971-006-338-3	September 16, 2019
92	Good Practice Options in Insect Management for Cabbage, Carrot and Potato A supplemental guide for BSU- Technology and Innovation Menu in Climate Change Mitigation and Adaptation	Andres A. Basalong, Bonie S. Ligat	(A) Research Output	978-971-006-339-0	September 16, 2019
93	Good practice options in Soil Management for Cabbage, Carrot and Potato	Alexander W. Fagyan	(A) Book	978-971-006-342-0	September 16, 2019
94	Good practice options in production for Cabbage, Carrot and Potato	Belinda A. Tad-awan	(A) Book	978-971-006-340-6	November 11, 2019
95	Techno guide for Agricultural Practices (GAP) on Spray-Type Chrysanthemum Production	Carlito P. Laurean, Teresita K. Mangili	(O) Research Output	978-971-006-341-3	November 11, 2019

	Title	Author/s	Class	Registration No.	Filing Date
96	National Conference Agri-Aqua Technology Business Incubation Proceedings	Ruth C. Diego	(A) Journal	2704-4041	November 11, 2019

H. WRITESHOPS/ TRAININGS/ SEMINARS CONDUCTED

A total of 122 seminars/trainings/writeshops/information dissemination activities were conducted by the various research centers, institutes, and colleges of the university with 8,065 participants.

Table 8. List of Publications Registered for ISBN/ISSN

Center/ Institute	Number of Trainings Conducted	Number of Beneficiaries
OES	19	1,672
ORS	3	363
OVPRE	2	101
COARDC	4	136
HERRC	8	314
HORTI	9	961
NPRCRTC	14	472
CRAC	4	340
IHFSA	6	175
ISRD	7	354
REPO	2	71
IPRO	6	257
CSAC	4	198
CA	4	112
IIT	1	152
ATBI	14	324
CAS	2	43
CHET	5	142
CTE	8	1,878
Total	122	8,065

OTHER R & E HIGHLIGHTS

VPRE Leadership Turn over



Dr. Ruth S. Batani accepts the responsibility as Vice President for Research and Extension from Dr. Carlito P. Laurean during the turn over ceremony held on October 28, 2019 at the Everlasting Hall, New R & E building.

Dr. Laurean served as VPRE from October 2015 to October 2019. Dr. Batani was also the former Director of OES before her designation as VPRE effective November 1, 2019.

2nd International Conference on Food, Environment and Culture



Benguet State University through the Research and Extension sector conducted the 2nd International Conference on Food, Environment, and Culture on November 27-29, 2019 held at Crown Legacy Hotel in the City of Baguio. The conference theme is “Building Climate Resilience through Inclusive Global Innovations”.

Belgium Ambassador to the Philippines H.E. Michel Goffin was the keynote speaker during the opening program on November 27 and Department of Agriculture Secretary Dr. William D. Dar was the guest of honor during the closing program on November 29. Local and international plenary speakers also shared their expertise in the field of food, environment, forestry and culture.

Inauguration of the Soil, Plant, and Water Laboratory



BSU Officials headed by BSU President Feliciano Calora, Jr. (4th from R) and DOST officials headed by DOST Secretary Fortunato Dela Peña (3rd from L) led the unveiling of the Soil, Plant, and Water Laboratory Marker at the New Research and Extension Building last July 26, 2019. (From L-R) Dr. Nancy Bantog, Dr. Reynaldo Ebor, Dr. Carlito Laurean, Dir. Juanito Batalon, La Trinidad Mayor Romeo Salda.

Pantas Awardee – Dr. Carlito P. Laurean



The BSU Research and Extension sector celebrates another achievement for 2019 as the University bagged the Pantas Award for Most Outstanding Research Administrator in the person of Dr. Carlito P. Laurean, the Vice President for Research and Extension.

The Pantas Award is a yearly recognition given by the Department of Science and Technology-Philippine Council for Agriculture, Aquatic and Natural Resources Research and Development (DOST-PCAARRD). This year's Award covers the 5-year accomplishment of the applicants in terms of research administration.

Dr. Laurean, as a research administrator exemplifies leadership, competence, resilience and excellence which BSU, the Cordillera Administrative Region and the wider community benefited from.

Research Proposal Writeshop



The R & E Sector spearheaded the conduct of Research Proposal Writeshop held on June 24-28, 2019 for the first batch and on July 8-12, 2019 for the 2nd batch. The two activities were conducted at Awesome Hotel in San Juan, La Union.

This activity also serves as an avenue for senior researchers to mentor the junior researchers and at the same time for faculty researchers to acquire additional knowledge on research writing which they will pass

Other R and E Activities



Hands-on training on Enhanced Postharvest Processing for Arabica Coffee and Coffee Cupping conducted by Institute of Highland Farming Systems and Agroforestry held on February 19-20, 2019 at Bektey, Puguís, La Trinidad



Hands-on demo on processing of sweetpotato and legume based food products (SP Puto, Camote -lemon juice, Pigeon Pea Cookies, Legume Crackers) conducted by NPRCRTC held on March 28, 2019