Department of Science and Technology
Science Education Institute
Engineering Research and Development for Technology

ANNUAL REPORT

2018

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The ERDT

Engineering Research and Development for Technology (ERDT) is a consortium of eight universities that offers mature engineering graduate programs. As a program funded by the Department of Science and Technology, it aims to address the lack of highly trained researchers, scientists, and engineers (RSEs) and R&D engineering activities in the country by implementing its program components which are: *Human Resource Development*, *Research and Development*, and *Infrastructure Development*.

OBJECTIVES

ERDT is created to:

- Implement high-impact research agenda that are aligned with the development plans of the Philippines;
- Contribute in attaining a critical mass of graduates with Master's and Doctorate degrees;
- Upgrade the qualifications of practicing engineers;
- Upgrade the quality of engineering colleges and make engineering graduate education accessible; and
- Help in developing a culture of research and development (R&D) in the country.

BRIEF HISTORY

In April 2007, Dean Dr. Rowena Cristina L. Guevara of the UP Diliman College of Engineering (COE) along with six other deans of engineering schools came up with a proposed human resource development (HRD) program to the Department of Science and Technology (DOST). The proposed program generally aims to increase the number of researchers, scientists and engineers (RSEs) in the country.

The ERDT Consortium was then conceptualized, endorsed by former DOST Secretary Estrella F. Alabastro, and approved by former President Gloria Macapagal-Arroyo with a P3.5 Billion funding for three years.

Since its inception, ERDT has successfully laid the footprint and model for a successful engineering research program in the country. Numbers show that through the ERDT R&D program, research activities in engineering have increased significantly. The level and quality of research have also improved leading to a number of funded research works and papers accepted in refereed journals and conferences.

The ERDT 15-YEAR PLAN

The effect of globalization has exposed our vulnerability to foreign technology dependence and the lack of technological research in the country. While we continue to produce engineers who are trained to use foreign-developed technologies, our Asian neighbors have turned their focus on producing graduate research engineers who are trained to develop and create such technologies. This is a realization that graduate level research can usher in high-value engineering and economic development. South Korea and Taiwan have recognized this 40 years ago. Both countries are now leading technological centers and economic powers in the world.

In the past decade, Vietnam embarked on a massive man-power development. From 2000-2009, Vietnam has sent more than 2,100 Ph.D. candidates and 1,600 masters abroad. The government of Vietnam plans to send a total of 10,000 Ph.D. candidates to be trained overseas. It is not surprising then that Vietnam produces more graduate research engineers than the Philippines. In fact, most of our ASEAN neighbors such as Thailand, Malaysia, and Singapore, far outpace us in the number of research engineers.

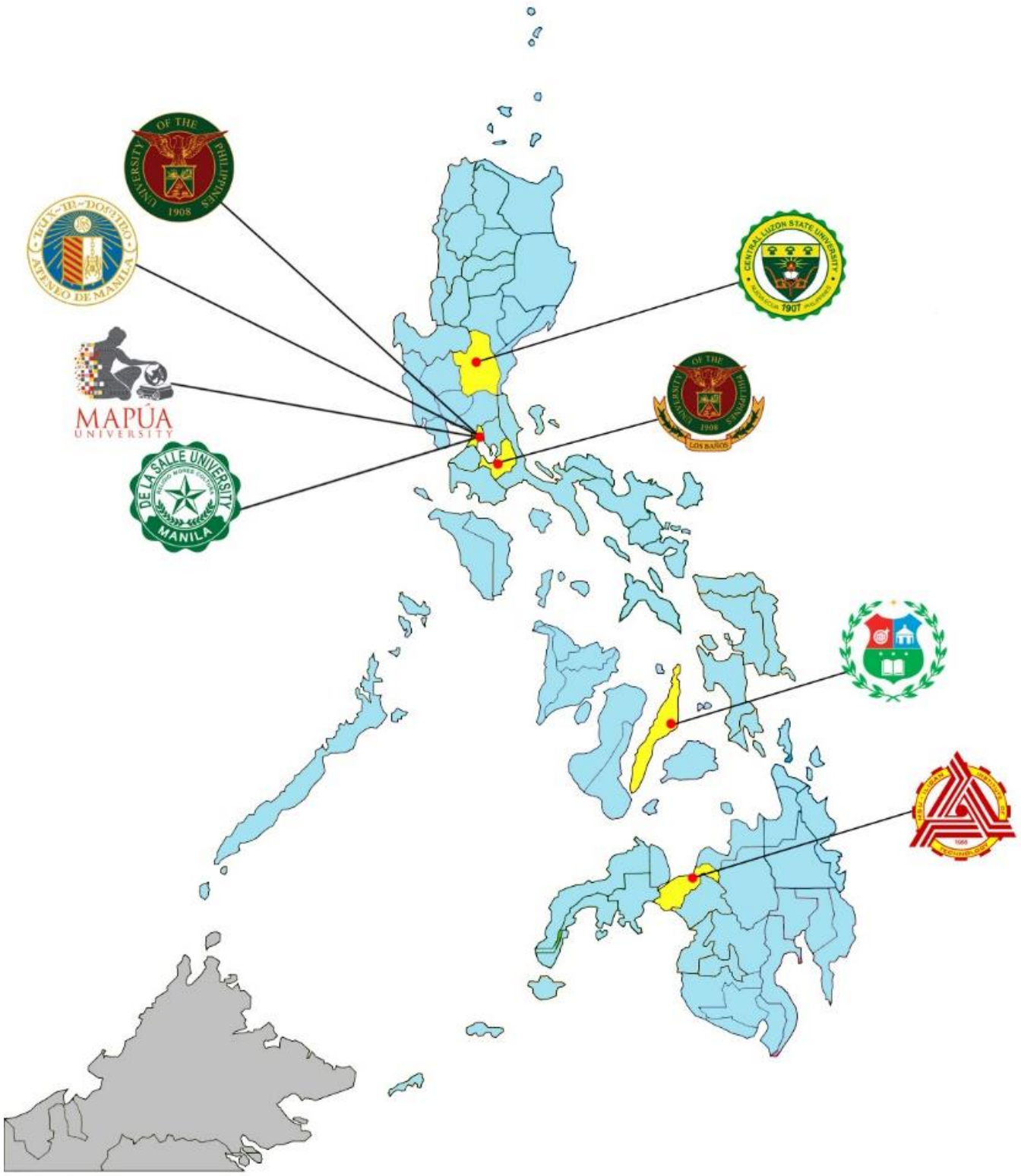
The need to develop our technology-based research capability through engineering graduate research training has never been more urgent. We need engineers with advanced degrees to make S&T work for Filipinos: from disaster mitigation to poverty alleviation, from agriculture to semiconductor industries; ensure a sustainable environment and affordable energy for the future; and produce indigenous technologies to better our lives. The continued implementation of the Engineering Research and Development for Technology (ERDT) will address the lack of highly trained researchers, scientists and engineers (RSEs) and R&D activities in engineering in the country. The ERDT, through the consortium of 8 universities, with mature graduate programs in engineering, should be able to generate within reasonable time a sizeable chunk of the necessary number of RSEs and engineering R&D required for national development and provide the human infrastructure supportive of local R&D.

The Consortium is needed to bootstrap the various engineering programs in the graduate level. The specializations in each university will be developed in accordance with the identified needs of technology-based industries. These universities have strong ties with industry, ensuring synergy between academe and industry.

Based on the absorption capacity of the Consortium, the viability for us to reach the UNESCO benchmark of RSEs will be realized by a human resource development plan that offers generous scholarships for engineers. With the intended yearly intake of ERDT scholars, and with the assumption that ERDT will contribute a quarter of the research manpower for the country, the Philippines would be able to reach the UNESCO benchmark on the 16th year of the Program. If the potential for multiplier effect of each research graduate in the academe is factored in, it is possible that the UNESCO benchmark can be achieved in a shorter period of time.

The plan to accept new members of the ERDT Consortium to Engineering Schools who are able to attain the minimum requirements for ERDT accreditation will further accelerate the period by which we can attain the UNESCO benchmark.

The ERDT Consortium



Metro Manila: Ateneo de Manila University, De La Salle University, Mapua University, University of the Philippines – Diliman
Luzon: Central Luzon State University, University of the Philippines – Los Baños
Visayas: University of San Carlos
Mindanao: Mindanao State University – Iligan Institute of Technology

Message from the Program Leader

The Engineering Research and Development for Technology (ERDT), one of the flagship projects of the Philippine government, was fully implemented in 2008 and is focused on achieving a critical mass of researchers, scientists, and engineers (RSEs). RSEs help boost the country's R&D, which is crucial to its economic growth. Now, on its 12th year, the ERDT continues to endeavor to achieve this goal through its three components--- Human Resource Development, Research & Development, and Infrastructure Development.

Under its HRD component, the ERDT has provided 2,608 and 420 scholarships to MS and PhD students, respectively. From these figures, 1,106 scholars have obtained their MS degrees and 131 have earned their PhD degrees. These scholars are capable of advancing science and technology (S&T) through technology generation and innovation, establishing start-up companies, and delivering relevant research. We do have an urgent need for more RSEs in the Philippines. According to the UNESCO benchmark, there should be at least 380 scientists per million population for a country's research & development to take off. Slowly, the ERDT has been gaining ground and is contributing the number towards this end.

These RSEs are capable of creating or innovating technology, establishing start-up companies, or delivering quality research. They are our frontrunners in boosting the country's R&D. And, under the ERDT's five research tracks--- Energy; Environment and Infrastructure; Information and Communications Technology; Manufacturing and Machinery; Semiconductor, Materials and Electronics – several high-impact research works on better mining technologies, biofuel production technology, business development and industry, fabricated metal products, electronic products, and the like, have been carried out.

Other highlights and important accomplishments of the program are discussed in the pages of this 2018 Annual Report. May these accomplishments set the tone for a more dynamic collaboration among the ERDT stakeholders. The gains we have so far achieved hopefully would propel us to work harder and bring us to a more progressive and globally competitive Philippines.

RIZALINDA L. DE LEON, Ph.D.
Engineering Research and Development for Technology

2018 MILESTONES

JUL 13

7th ERDT Congress

SEP 18

Announcement of 1st Batch of Accepted Scholars

MAY 18

Faculty Research Mentoring Workshop

DEC 13

Announcement of 2nd Batch of Accepted Scholars

SEP 27-28

15th ERDT Conference

NOV 26 -DEC 6

ERDT Technology Benchmarking Initiative

HUMAN RESOURCE DEVELOPMENT

"Through ERDT Scholarship program, I was given a chance to pursue my MS Degree in Environmental Engineering. I had my research on Vehicular Emissions affecting the Ambient Air Quality, which is one of the most challenging environmental issues of the country nowadays. It was quite a tough journey, but still made it to the finish line. Thank you very much ERDT for the opportunity!"

RIA M. CARAMOAN
MS Environmental Engineering,
UP Diliman
Graduated: May 2018

"ERDT provides a very enabling experience that helps me improve my problem solving skills in addressing contemporary challenges in my chosen field. ERDT has been very supportive all the way , and I'm always grateful for it."

SHEILA MARIE A. VILLOTA
MS Agricultural Engineering, CLSU
Graduated: February 2018

"ERDT Scholarshipo Program gave me the opportunity and assistance to finish my MS and PhD degrees."

ALFRED F. FORTU JR.
PhD in Agricultural Engineering, UPLB
Graduated: December 2018

"ERDT provided the financial support I needed to not only continue and finish my Master of Science degree in Computer Science, but also pursue international publication of my research papers."

EVAN DENNISON S. LIVELO
MS EComputer Science, DLSU
Graduated: February 2018

"Through ERDT, I was able to realize that the true essence of being an engineer is to use your knowledge to contribute to the progress of technological innovation, not just by using it to pass the board examination"

JOSHUA B. ZOLETA
MS Materials Science and
Engineering, MSU-IIT
Graduated: December 2018

"ERDT not only gave me the financial assistance I needed to complete my thesis, but also the opportunity to present my work in global audiences"

MIGUEL ZENON NICANOR L. SAAVEDRA
MS Computer Science. AdMU
Graduated: July 2018

"ERDT has helped me on all the stages of attainging my MS degree. Through its assitance, I was able to present my thesis in the 7th international Conference on Ocean Energy in France, and was fortunate enough to win best poster award in the said conference."

NIÑO JHIM ANDREW B. DELA LUNA
MS Mechanical Engineering,
Mapua University
Graduated: March 2018

"With ERDT, my dream of obtaining a doctoral degree became a reality. ERDT provided me with opportunities to travel, engage with fellow researchers and learn from experts in the field. The research grant made the execution of my research possible. Largely, ERDT enabled me to focus on my work and not worry about my academic expenses.

MARIA LORENA L. TUBALLA
DOE in Energy Engineering, USC
Graduated: December 2018

TESTIMONIALS

I. HUMAN RESOURCE DEVELOPMENT

A. Local Graduate Scholarship

The ERDT Local Graduate Scholarship is the flagship scholarship program of the ERDT that helps engineering graduate students in pursuing and attaining MS and PhD degrees in any ERDT Consortium University.

This Scholarship further aims to improve the quantity and quality of engineering professionals in the country. The adequate number of engineers with advanced degrees is believed to produce compounding effect on the value chain in the industry for economic growth as well as improving the quality of education in engineering departments of both private and public higher academic institutions.

University	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Total Intake
ADMU		16	16	20	16	11	14	18	8	13	19	17	168
CLSU		15	9	13	8	29	27	24	6	25	23	52	231
DLSU		11	22	34	32	38	18	29	38	39	33	52	346
MU		8	32	14	16	27	46	37	43	36	41	53	353
MSU-IIT		10	8	15	21	16	29	26	10	18	30	41	224
UPD	55	34	88	85	66	88	89	56	72	85	110	124	952
UPLB			8	13	3	11	12	17	16	11	17	29	137
USC		13	15	10	11	2	14	16	29	30	15	42	197
Total	55	107	198	204	173	222	249	223	222	257	288	410	2608
Target	106	133	171	208	233	260	233	233	252	263	316	417	
Hit Rate	52	80	116	98	74	85	107	96	88	98	91	98	

Table 1. ERDT Local Graduate Scholarship actual intakes of MS scholars from 2007 to 2018.

Year of Award	Qualifiers	Graduated		Total
		On Time	On Extension	
2007	55	7	31	38
2008	107	29	54	83
2009	198	31	96	127
2010	204	27	89	116
2011	174	34	76	110
2012	221	53	73	126
2013	249	47	93	140
2014	213	52	83	135
2015	232	49	72	121
2016	256	61	28	89
2017	332	15	6	21
2018	410	3	5	---

Table 2. Status of MS Scholars

University	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Total Intake
ADMU				2	1	1	2	3	3	4	2	2	20
CLSU		2	3	1	4	1	2	6	5	3	3	3	33
DLSU		2	1	2	5	8	6	4	4	5	2	5	44
MU		1	2	1	7	4	14	5	5	6	7	5	57
MSU-IIT		2	2	3	3	4	6	8	2	3	4	6	43
UPD	18	15	15	13	6	17	8	11	14	17	17	16	167
UPLB			4	3		3	4		3	1	3	7	28
USC								3	7	6	3	9	28
Total	18	22	27	25	26	38	42	40	43	45	41	53	420
Target	23	20	32	44	50	55	50	50	56	59	59	57	
Hit Rate	78	110	84	57	52	69	84	80	77	76	69	93	

Table 3. ERDT Local Graduate Scholarship actual intakes of PhD scholars from 2007 to 2018.

Year of Award	Qualifiers	Graduated		Total
		On Time	On Extension	
2007	18		11	11
2008	22		10	10
2009	27	3	17	20
2010	25	2	13	15
2011	27	1	11	12
2012	37	4	15	19
2013	42	4	12	16
2014	39	7	9	16
2015	43	6	4	10
2016	46	1		1
2017	49	1		1
2018	53	---	---	---

Table 4. Status of PhD Scholars

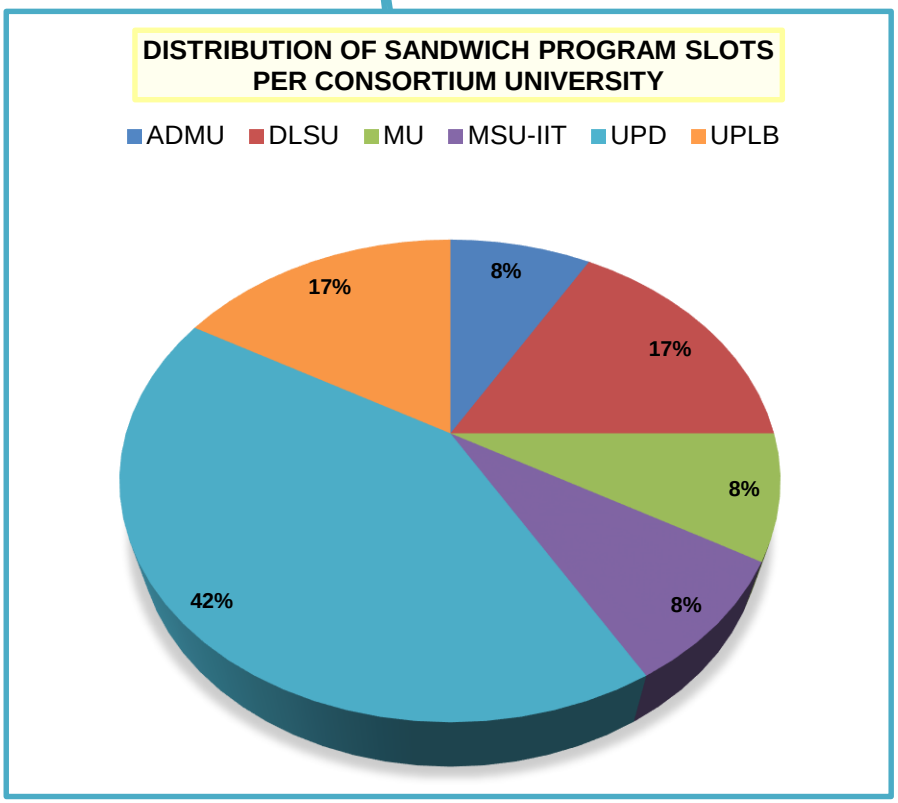
Annex A – List of MS who graduated in 2018
Annex B – List of PhD scholars who graduated in 2018

B. Sandwich Program

The ERDT Sandwich Program is a fellowship offered to ERDT scholars who wish to conduct research in a reputable university abroad for a maximum period of one year. It is designed to enable ERDT Local Graduate Scholars to conduct research abroad in areas that have yet to be developed in the consortium member university or in fields of studies where research facilities are not available or inadequate in the country.

Year of Award	Slots	Actual Intakes	Graduated	Status of Intakes			Ongoing SP Abroad	Withdrew Application
				Ongoing LC	For Monitoring	For Repayment		
2008	7	1	1					
2009	10	3	3					
2010	12	3	3					
2011	8	7	7					
2012	8	5	5					
2013	13	12	10			2		
2014	10	9	8			1		
2015	23	10	9	1				
2016	20	9	6		2			1
2017	17	18	9	7			1	1
2018	11	12	1	3			8	
Total	139	89	62	11	2	3	9	2

Table 5. Status of ERDT Sandwich Program Scholars



"The ERDT Sandwich Program provided me with the opportunity to conduct my research abroad, work with great minds, grow professionally, and establish international linkages. Aside from those, I was also able to experience the culture of other people, learn a new language, and broaden my horizons. My pursuit for higher learning was made possible through ERDT's generous support. I am truly grateful for the wonderful and worthwhile experience.**"**

- **JOSE COMIA JR.**
Sandwich Program Fellow

LC – Local Contract
SP – Special Project
Annex C – List of Sandwich Program Grantees who graduated in 2018

C. Faculty Development Programs

1. Foreign PhD Scholarship

The ERDT PhD Foreign Scholarship is given to faculty members of ERDT Consortium Universities who wish to pursue PhD studies in any engineering field in a recognized university or institution abroad.

Year	University	Slots	Actual Intake	Status				
				Graduated	For Monitoring	On Extension	Ongoing	Terminated
2006-2008	UPD	10	10	7	1			2
2009		10	3	2				1
2010		10	8	5	1			2
2011		11	3	3				
2012		10	7	5				2
2013		8	6	3	1	2		
2014		10	2	1		1		
2015	CLSU	2	0					
	UPD	4	4	1		2		1
	UPLB	2	2	2				
2016	CLSU	2	2				2	
	MSU-IIT	2	2				2	
	UPD	5	2				2	
	UPLB	2	2				2	
2017	ADMU	2	0					
	CLSU	2	2				2	
	DLSU	2	0					
	MU	2	0					
	MSU-IIT	2	3				3	
	UPD	2	0					
	UPLB	8	6				6	
	USC	2	1				1	
2018	ADMU	0	0					
	CLSU	2	1				1	
	DLSU	1	2				2	
	MU	0	0					
	MSU-IIT	5	2				2	
	UPD	0	0					
	UPLB	9	7				7	
	USC	2	2				2	
Total		129	79	29	3	5	34	8

Table 6. Distribution of Faculty Development – Foreign PhD Scholarship per University

Annex D - list of Foreign PhD scholars who graduated in 2018

2. Post-Doctoral Grant

The ERDT Post-Doctoral Grant allows retooling and retraining of faculty members to ensure that researches conducted and proposed under the ERDT program are current and relevant.

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Total
Recipients	0	6	2	0	2	0	1	1	1	1	0	14

Table 7. Post-Doctoral Grantees from 2008 to 2018

3. Faculty Research Dissemination Grant*

The ERDT Faculty Research Dissemination Grant (FRDG) is established to enable faculty members to present their research works in international conferences, fora or scientific meetings or publish their research works in journals.

The grant aims to provide opportunities to expand research networks and promote the ERDT program globally.

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Total
Recipients	1	17	51	25	32	43	72	62	60	58	67	488

Table 8. FRDG Recipients from 2008 to 2018

4. Faculty Research Grant

The ERDT Faculty Research Grant is created to help the faculty members who are currently enrolled in ERDT supported graduate or accelerated programs in an ERDT Consortium University to complete all their requirements leading to a successful thesis/dissertation defense. The grantee shall be considered as an ERDT scholar with lateral entry.

A total of 26 faculty members (18 MS, 8 PhD) have received the ERDT Faculty Research Grant from 2014-2018.

University	2014				2015				2016				2017				2018			
	Slots		Grantees		Slots		Grantees		Slots		Grantees		Slots		Grantees		Slots		Grantees	
	MS	PhD	MS	PhD	MS	PhD	MS	PhD	MS	PhD	MS	PhD	MS	PhD	MS	PhD	MS	PhD	MS	PhD
ADMU	1												3				1			
CLSU					1				1				3							
DLSU		1		1		2		2		2		1		2		2		3		1
MU	2												3				1			
MSU-IIT	2												3				1			
UPD	7	1	2	1	6		4		4		2		6		3		4		4	
UPLB	2		2										3				1			
USC	2				1		1		1				3				1			
Total	16	2	4	2	8	2	5	2	6	2	2	1	24	2	3	2	9	3	4	1

Table 9. FRG Recipients from 2014 to 2018

*Annex E – List of FRDG Recipients for 2018

D. Visiting Professors and Researchers Program

The ERDT Visiting Professors and Researchers Program provides for the invitation and hosting of internationally known professors and researchers to visit ERDT Consortium Universities.

Beneficiaries of this program include ERDT Local Graduate Scholars, faculty members, and the hosting department/institute of the ERDT Consortium University. The ERDT Consortium will likewise benefit from this through potential R&D collaboration.

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Total
Visiting Professor	10	21	12	3	9	11	9	12	6	15	10	118
Visiting Researcher	1	2	0	0	0	1	0	0	0	0	0	4

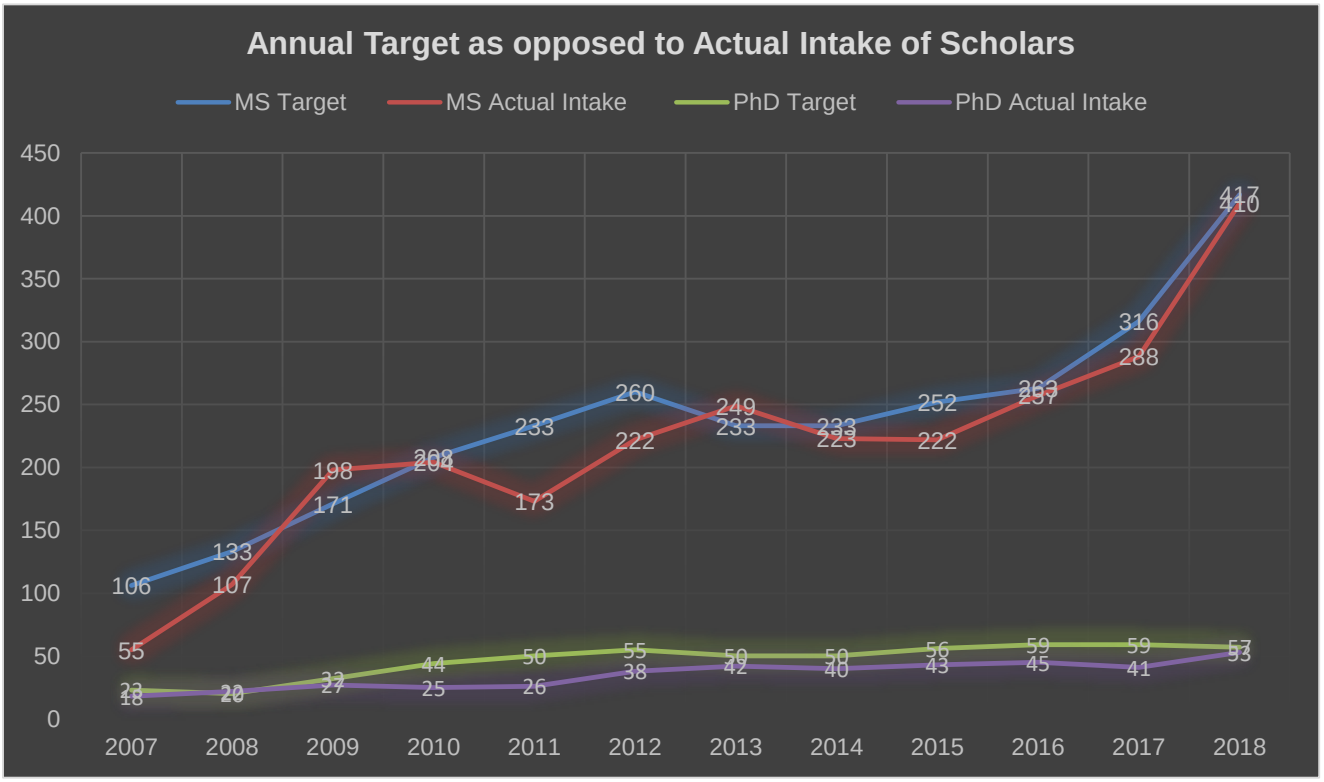
Table 10. Number of Visiting Professors and Researchers from 2008 to 2018

Above: Pubmats used for two of the VP lectures held in 2018.

HRD PROGRESS OVER THE YEARS

The United Nations Educational, Scientific, and Cultural Organization (UNESCO) suggests a ratio of 380 Researchers, Scientists, and Engineers (RSEs) per million population (MP). Although there has been a notable increase from 2009 (180 RSEs/MP) to recent years, the Department of Science and Technology is projecting that it will take a few more years before the Philippines hit the UNESCO benchmark.

Meanwhile, ERDT also sets annual targets for its Human Resource Development program in order to help the country meet its aspired number of RSEs on time. As of 2018, ERDT's average hit rate of targets as opposed to actual intakes is 90% for MS scholarship and 78% for PhD scholarship.



Since its establishment, ERDT has taken in a total of **2,608 MS scholars** and **420 PhD scholars**. Out of those who have obtained their degrees, majority are employed in academic institutions. The second largest number of graduates are employed in industry, followed by government, while a small number has put up start-up companies or has joined non-government organizations.

The latest data available is from the 2013 UNESCO Report which details that the Philippines has a ratio of 270 RSEs per million population.

RESEARCH & DEVELOPMENT

II. RESEARCH & DEVELOPMENT

The Research and Development (R&D) component of ERDT addresses the lack of quantity and quality of research in engineering by providing opportunities for its scholars to participate and work on projects related to their theses and dissertations. In line with this, ERDT ensures that research works of its scholars are aligned with the Nationals Science and Technology Plan (NSTP) and the Medium Term Development Plan (MTDP) to guarantee that researches conducted are relevant and transferable to the country's benefit.

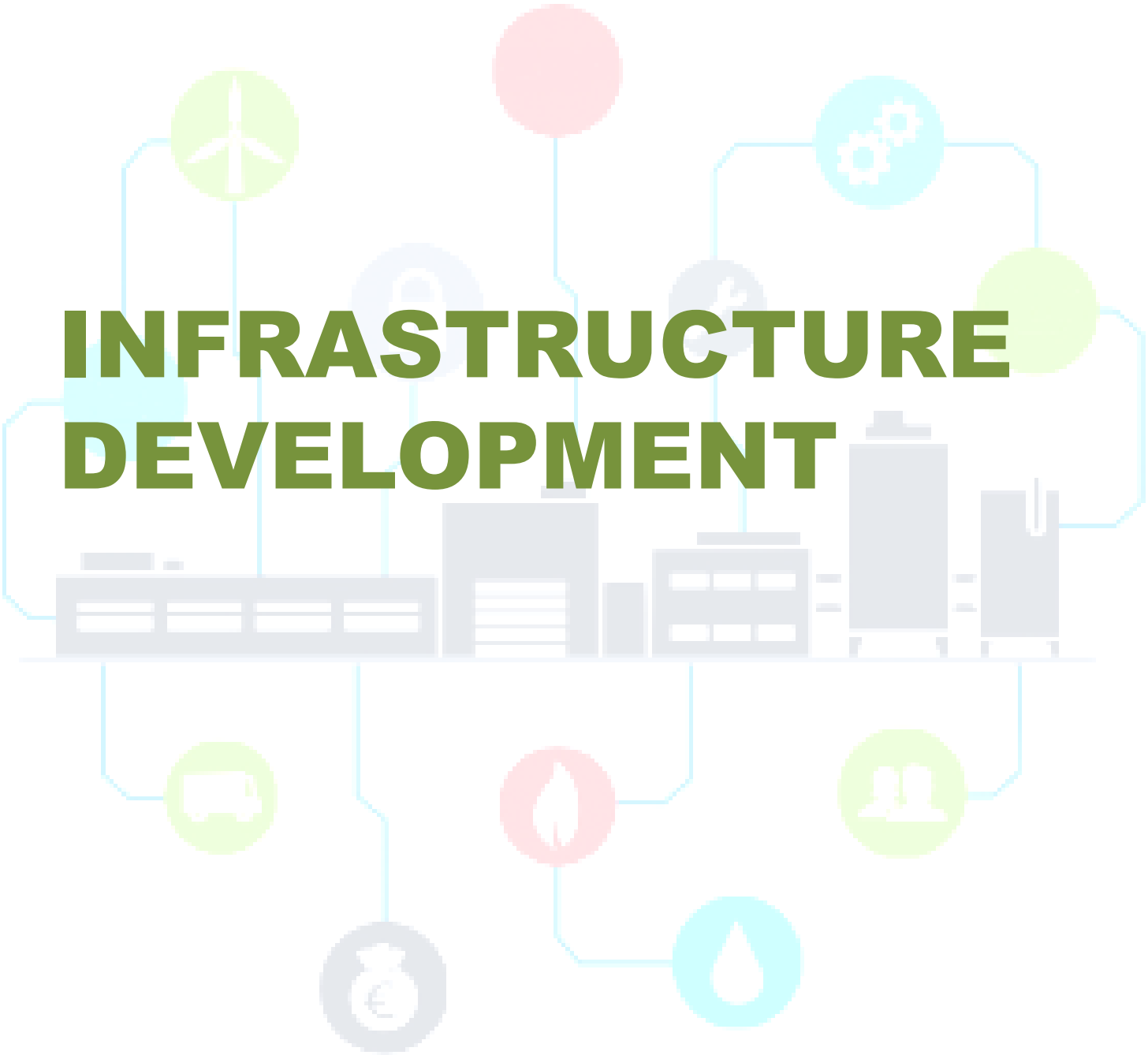
Below is the List of Projects under the Program "Ambisyon ng ERDT para sa R&D ng Bayan"

	Program and Included Projects / Sole Project	Proponent	University	Duration	Budget (Php)	
					Proposed to DOST	Total Including Counterpart
The Energy Hub		Dr. Erees Queen B. Macabebe	ADMU		58,544,480.68	69,446,016.13
1	Energy Monitoring for Smart Buildings	Engr. Maria Leonora C. Guico	ADMU	3 years	12,705,573.60	15,630,573.60
2	Demand Side Management with RE Sources in Smart Buildings	Dr. Erees Queen B. Macabebe	ADMU	3 years	17,042,201.00	20,473,732.45
3	Resource Management in Electric Vehicles	Carlos Oppus	ADMU	2 years	5,807,045.60	7,087,045.60
4	State-of-Charge and State-of-Health of Batteries for E-vehicles and RE Applications.	Juan Antonio Marinas	ADMU	2 years	5,071,427.20	6,351,427.20
5	System Integration and Visualization	Dr. Andrei D. Coronel	ADMU	3 years	17,918,233.28	19,903,237.28
Smart Agriculture for Higher Productivity and Efficiency		Dr. Ireneo C. Agulto	CLSU		99,172,202.30	100,774,202.30
1	CREATIVE FARMS: Climate-Resilient Entrepreneurial Agriculture Through Indoor Vertical Farming System	Dr. Ireneo C. Agulto	CLSU	2 years	11,155,866.90	11,155,866.90
2	WATER: Wider Adaptation of Technologies for Environmental Resiliency for Sustainable Fish and High Value Crops	Dr. Ireneo C. Agulto	CLSU	2 years	7,998,184.00	7,998,184.00
3	Alternative Small Scale Irrigation Systems Technologies (ASSIST) for Increased Productivity in Highland Agriculture	Dr. Armando N. Espino, Jr	CLSU	2 years	4,788,400.00	4,788,400.00
4	Automated Furrow Irrigation System (AFIS): A Smart Farm Solution for Improved Yield and Increased Water Productivity	Dr. Armando N. Espino, Jr.	CLSU	2 years	4,806,400.00	4,806,400.00
5	Controlled Environment for Recirculating Aquaculture Tank System	Marvin M. Cinense	CLSU	2 years	5,696,803.20	5,696,803.20
6	Design of Nutrient and Climate Change Sensitive Innovative Mushroom Housing for Leaf Litter Degrading and Ligninolytic Mushrooms	Jeffrey A. Lavarias	CLSU	1.5 years	3,000,000.00	3,000,000.00
7	Establishment of Pilot Village-Scale Mechanized Farming System for Mushroom Production and Processing	Victorino T. Taylan, Marvin T. Valentin	CLSU	2 years	18,116,400.00	18,116,400.00
8	Simulation of Temperature Distribution and Airflow Pattern in Naturally-ventilated Greenhouses in CLSU using Computational Fluid Dynamic	Chito F. Sace	CLSU	2 years	12,526,810.40	12,526,810.40
9	Appropriate Agricultural Mechanization Technologies: A Necessary Component Towards a Green Economy	Dr. Helen F. Gavino	CLSU	2 years	7,500,000.00	7,500,000.00
10	Increasing Fuel Efficiency and Improving the Capacity of Land Preparation Machine and Equipment for Rice through Retrofitting and Restoration of Machine Components	Victorino T. Taylan	CLSU	1 year	3,597,647.60	3,597,647.60
11	Development and Performance Evaluation of a Small-Scale Carrot Seeder	Marvin T. Valentin	CLSU	1 year	3,701,808.60	4,547,808.60

12	Development and Performance Evaluation of a Small-Scale Vegetable Raised Bed Preparator	Melba D. Denson, Marvin T. Valentin	CLSU	1 year	2,691,233.60	3,447,233.60
13	Earth Hollow Blocks – An Alternative Construction Material	Joseph Frank A. Nagal	CLSU	1 year	1,583,600.00	1,583,600.00
14	Determination of the Effects of Root Zone Cooling on the Growth and Yield of Hydroponic Cucumber Using Computational Fluid Dynamics	Chito F. Sace	CLSU	2 years	12,009,048.00	12,009,048.00
Systematic Management of Resources and Technology for Future Cities		Dr. Jonathan Dungca			92,038,881.14	104,279,981.14
1	Seismic Analysis and Restoration Technique for Water Lifeline Network Systems (SMART - Waterlines)	Dr. Lessandro Garciano	DLSU	2 years	8,653,540.00	10,253,540.00
2	Development of a Microalgae Photobioreactor with Carbon Dioxide Capture (PBR – CARDIAC)	Dr. Alvin B. Culaba	DLSU	2 years	9,080,920.00	9,080,920.00
3	Development of optimization models for the design and operation of energy systems	Dr. Kathleen B. Aviso	DLSU	2 years	2,202,000.00	4,442,000.00
4	Industrial by-product/waste utilization for the development of composite materials	Dr. Michael Promentilla	DLSU	2 years	4,999,360.00	4,999,360.00
5	Structural Performance of Composite Bamboo walls for low-cost homes	Dr. Lessandro Garciano	DLSU	2 years	2,760,000.00	2,760,000.00
6	Evaluation of Nutrient Recovery Facility in Metro Manila Municipal Wastewater	Dr. Aileen Orbecido	DLSU	2 years	4,994,409.60	5,954,409.60
7	Design of a wearable sensor for goat estrus monitoring and detection	Dr. Nilo Bugtai	DLSU	2 years	4,500,000.00	6,000,000.00
8	Modular patient monitoring system integrated with medical ventilator	Dr. Nilo Bugtai	DLSU	2 years	4,800,000.00	6,300,000.00
9	A Vision-based Crowd Estimation System (ViCES)	Dr. Joel Ilao	DLSU	2 years	2,537,719.04	2,797,719.04
10	Smart Surveillance for Healthcare and Human Mobility Tracking using Social Media Data	Charibeth Cheng	DLSU	2 years	3,018,244.00	3,571,644.00
11	Mapping and Data Analytics Technologies for Human Mobility Analysis to Support Community Surveillance, Efficient Energy Use and Disaster Response	Ethel Chua, Joy Ong	DLSU	2 years	14,575,692.00	15,129,092.00
12	Development of SoC-based Mesh Network Modules for Human Mobility Tracking to Support Community Surveillance, Efficient Energy Use and Disaster Response	Clement Ong	DLSU	2 years	11,476,536.00	12,029,936.00
13	Secure Interconnection Framework based on the Internet of Everything	Dr. Marnel Peradilla	DLSU	2 years	5,650,000.00	6,150,000.00
14	Context-aware Data-centric Human Activity Recognition and Prediction using Wireless Sensor Network Data	Jocelynn Cu	DLSU	2 years	9,522,728.00	10,934,728.00
15	Smart Surveillance of Patients Needing Special Medical Care using Tele-health Services Designed for Marginalized Communities with Inadequate Internet Access	Judith Azcarraga	DLSU	1 year	3,267,732.50	3,876,632.50
Development of Fly-ash Incorporated Materials for Thermal Energy Storage and Construction Applications and their Environmental Implications		Maria Sheila K. Ramos	MSU-IIT	3 years	42,252,095.00	42,252,095.00
Utilisation of Mine Waste for Defense Applications		Dr. Ivyleen B. Arugay	MSU-IIT	3 years	50,708,148.40	50,708,148.40

Sustainable Approach to Combat and Hamper Environmental Threats		Jonathan Winston L. Salvacion	MU		75,164,456.58	75,164,456.58
1	Development of Sustainable Sachet Packaging Solution through Design and Configuration Optimization	Dr. Allan N. Soriano	MU	3 years	32,822,958.19	32,822,958.19
2	Reinforced Starch-based Bioplastic for Sachet Packaging of Food,Home Care and Personal Care Products	Prof. Aileen Nieva	MU	3 years	20,503,323.02	20,503,323.02
3	Delamination and De-polymerization of Waste Sachet Laminate	Prof. Aileen Nieva, Dr. Allan N. Soriano	MU	3 years	21,838,175.37	21,838,175.37
How Safe are Our Roads?		Dr. Ricardo de Guzman Sigua			29,000,000.00	29,000,000.00
1	Developing medical devices for monitoring intoxication of drivers		UPD	2 years		
2	Developing engineering devices to control road crashes related to vehicles		UPD	2 years		
ITS - Intelligent Transport Systems: Development of Advanced Local Traffic Signal Control System		Dr. Ricardo de Guzman Sigua	UPD	2 years	5,900,000.00	5,900,000.00
A Drainage System Monitoring ROV		Engr. Samiel Louie M. Arrojado	UPD		8,000,000.00	8,000,000.00
Underwater Robots for Marine Resource Assessment		Engr. Samiel Louie M. Arrojado	UPD	2 years	5,555,920.00	5,555,920.00
BUCo I4: Building Up the Coconut Biorefinery for Industry 4.0		Myra G. Borines			154,977,464.03	154,977,464.03
1	Coco Pests Eradication using Unmanned Aviation Vehicle (UAV)	Rosanna Marie C. Amongo	UPLB	3 years	13,191,033.60	13,191,033.60
2	Innovative and Value-Added Products from Coconut: Extraction of Phytohormones from Waste Coconut Water Using Biochar Derived from Agricultural Residue	Veronica P. Migo	UPLB	3 years	21,466,432.00	21,466,432.00
3	Machine Design for Coconut By-products: Design and Evaluation of Coconut Biomass Shredder	Ireneo C. Agulto	CLSU	2 years	4,000,000.00	4,000,000.00
Environmental Adaptation Technologies and Systems (EATS) for Food		Rosanna Marie C. Amongo			58,159,999.21	58,159,999.21
1	Agricultural Mechanization Technologies for Sustainable Staple Food Production	Rosanna Marie C. Amongo	UPLB	2 years	21,147,455.84	21,147,455.84
2	Integrated Hydroponics and Recirculating Aquaculture Systems	Aurelio A. Delos Reyes	UPLB	3 years	17,564,279.29	17,564,279.29
3	Development of Environmentally Sound Food Production Buildings for Livestock Through Innovative Designs	Vicente G. Ballaran	UPLB	2 years	13,459,672.00	13,459,672.00
4	Cost-Effective Cold Chain Systems and Monitoring for High Value Crops	Kevin F. Yaptengco	UPLB	2 years	5,988,592.08	5,988,592.08

INFRASTRUCTURE DEVELOPMENT



III. INFRASTRUCTURE DEVELOPMENT

The third component of the ERDT program is Infrastructure Development which includes the construction of six buildings and the renovation of existing facilities in the College of Engineering, UP Diliman. The newly constructed buildings house state of the art laboratories and equipment in support of the R&D thrust of ERDT.

Building	% Accomplished as of 01/2019	Remarks
Chemical Engineering Building	100% Completed	Turned over to department
Electrical and Electronics Engineering Power Laboratory Building	99% Completed	For turnover
Energy and Environmental Engineering Building	Phase 1 & 2 Completed	Ongoing application for building permit. No power, water and sewer connection yet
Industrial Engineering – Mechanical Engineering Building	99% Completed	40% occupied as of 12/31/18
Institute of Civil Engineering Building	99% Completed	For final computation of retention deductive. 100% operational
Mining, Metallurgical and Materials Engineering Building	Phase 2 Completed	100% operational. Permit to Operate (PTO) for elevator is not issued yet

Figures below show the architectural perspective and the actual photos of the infrastructure projects of ERDT:

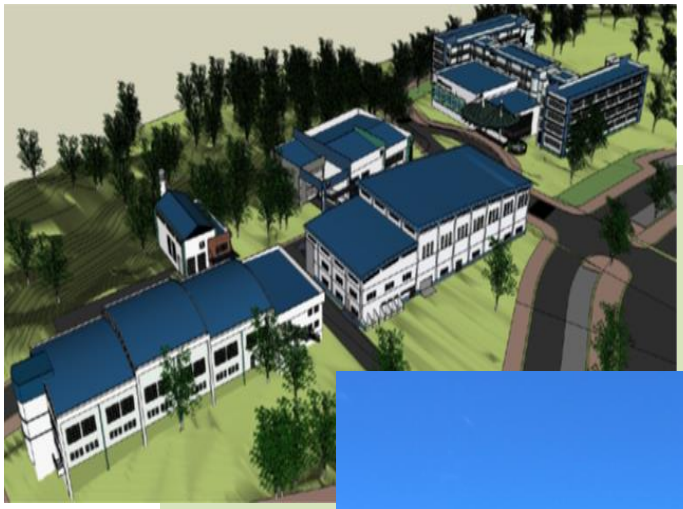
1. Chemical Engineering Department

2. Electrical and Electronics Engineering Power Laboratory Building

3. Energy and Environmental Engineering Building

4. Industrial Engineering – Mechanical Engineering Building

5. Institute of Civil Engineering Building



6. Mining, Metallurgical and Materials Engineering Building

ANNUAL EVENTS & ACTIVITIES

ANNUAL EVENTS & ACTIVITIES

In order to accentuate its objectives and complement its programs, ERDT organizes annual events and activities that include Congresses, Conferences, Faculty Trainings, Workshops and Visiting Professors Lectures. These events and activities are anchored towards the goal of providing opportunities for ERDT scholars to learn from and/or collaborate with people from academe, industry, and government agencies.

The table below shows a summarized details of ERDT Consortium events and activities this 2018:

Title of Event	Theme/Focus	Date	Venue	Resource Persons
ERDT Faculty Research Mentoring Workshop	---	May 18	Quezon City	Dr. Maria Antonia Tanchuling Dr. Victor Ella Dr. Violeta Bautista
7th ERDT Congress	The Human Engineer	July 13	Philippine International Convention Center	Usec. Rowena Cristina Guevara Dr. Jazmin Llana Prof. Leonardo Rosete Prof. Jerry Yapo Fr. Bienvenido Nebres
15th ERDT Conference	Engineering for Humanity	September 27-28	City of Manila	Dr. Enrico Paringit Dr. Francisco Viray Dr. Hideaki Ohgaki Atty. Marissa Cerezo Asec. Rafaelita Aldaba Dr. Mikio Umeda Dr. Nobumasa Sekishita Dr. Jun Tanimoto Dr. Keiichi Ishihara Dr. Carlo Arcilla Dr. Pri Utami
ERDT Technology Benchmarking Initiative	Agriculture under arid conditions and on marginal soils & Water Management and Utilization for Farming	November 26-30	Technion (Israel Institute of Science and Technology), Agricultural Research Organization – Volcani Center, Afikei Emek Hefer Association	
	Plant Nutrition & Horticulture	November 30 - December 4	Japan Plant Factory Association, Hokkaido University	
	Plant Biology & Agricultural Machineries	December 3-6	Nara Institute of Science and Technology, Kyoto University, Yanmar Co., Ltd.	

Title of Event	Theme/Focus	Date	Venue	Resource Persons
Visiting Professors Lectures*	Biomedical Engineering	February 22 - March 24	DLSU	Dr. Raouf Naguib
	Educational Data Mining	May 26 - June 3	ADMU	Dr. Jaclyn Lorraine Ocumpaugh
	Social Innovation	July 1-8	UPD	Prof. Khanjan Mehta
	RFID Technologies and the Modeling of High-Speed Interconnections	August 30 - September 5	MSU-IIT	Prof. Chi Fang Huang
	Importance of Wind Tunnel Testing for Atmospheric Environments in Southeast Asia	August 31 - September 29	USC	Prof. Sekishita Nobumasa
	Fuel Cell Technologies and Solar Power	September 3-9	CLSU	Dr. Po-Ya Abel Chuang
	Development of Mechanized and Smart Farming	September 24 - October 5	UPLB	Dr. Mikio Umeda
	Geodesy, Gravimetry and Geophysics	October 14-20	UPD	Prof. Gabriel Strykowski
	Geodesy, Gravimetry and Geophysics	November 12-18	UPD	Prof. Rene Forsberg
	Research Methodology and Publication	December 12-13	DLSU	Dr. Ming-Lang Tseng

*Annex G - information on ERDT Visiting Professors and their lectures

FACULTY RESEARCH MENTORING WORKSHOP

Faculty members of ERDT Consortium Universities came together to participate in the Engineering Faculty Research Mentoring Workshop that happened last 18 May 2018 at the Eastwood Richmonde Hotel in Quezon City.

In her welcome remarks, Dr. De Leon stressed the critical role that research advisers play in molding students to become successful researchers, scientists, and engineers (RSEs), and renewed ERDT's commitment to providing development opportunities for its faculty members.

Dr. Rizalinda L. De Leon delivering her Welcome Remarks.

Plenary lectures were held in the morning. Dr. Maria Antonia N. Tanchuling discussed the challenges faced by student researchers and presented different ways by which research advisers can help their advisees graduate on time. A complimentary discussion aimed at enabling the participants to guide their advisees into publishing their research works soon followed. Dr. Victor B. Ella shared strategies and tips that research advisers may use to assist their advisees in looking for the best publication opportunities for their researches, spotting and avoiding predatory journals, and ensuring that their works are ready to be published. The third and final plenary talk circles around the promotion of mental health awareness for graduate researchers. Dr. Violeta V. Bautista shared with the participants the different *types of student researchers* and explored the different approaches that should be observed when dealing with them. In order to be effective research advisers, Dr. Bautista argued that faculty members must be in their best shape and sound mind as well.

Dr. Violeta V. Bautista (left) and Dr. Victor B. Ella (right) answered questions from the audience during the open Forum.

After the plenary talks, a workshop was held in the afternoon. The participants went through a series of activities that were designed to help them establish rapport with their advisees and execute steps in order for them to reach their goals as faculty members, research advisers, and individuals.

Faculty members pose for a group photo with the ERDT Program Leader and Project Leaders

7th ENGINEERING RESEARCH & DEVELOPMENT FOR TECHNOLOGY CONGRESS

Held last 13 July 2018 at the Philippine International Convention Center - Reception Hall, the 7th Engineering Research and Development for Technology Congress was envisioned and designed to provide a platform for the better understanding of the dynamics between and among engineering, humanities and social science.

Dr. Rowena Cristina L. Guevara, Undersecretary for Research and Development of the Department of Science and Technology and the First Program Leader of ERDT, backtracked to when ERDT was founded to revisit the purpose of the program and to highlight that ERDT was founded to be an investment for global competitiveness. Dr. Guevara also explained to ERDT scholars how crucial their roles are in developing a culture of *Science and Technology* (S&T) in the Philippines. Alongside this, Dr. Guevara also challenged the scholars to charge forward and create designs that will improve the lives of Filipinos through commercialization of new and emerging technologies and products of government-funded *Research and Development* (R&D).

Dr. Rowena Cristina L. Guevara delivering her keynote speech.

In her plenary talk, Dr. Jazmin B. Llana further supported the principle of “engineering for the people” that was already incorporated in Dr. Guevara’s keynote speech by explaining how engineers should constantly and continuously reflect on their humanity in order to remember the bigger picture that underlies their profession.

The Poster Competition commenced before the continuation of the plenary talks. Thirty-seven (37) abstracts were pre-selected to proceed to the Poster Competition. Judging panels of the different ERDT R&D tracks --- *Energy*, *Environment and Infrastructure*, *Information and Communications Technology*, *Manufacturing and Machinery*, and *Semiconductors, Materials and Electronics* evaluated the posters while corresponding authors explained the highlights of their studies.

Posters categorized under the different ERDT R&D Tracks.

The plenary talks resume right after the Poster Competition. Prof. Leonardo C. Rosete, Dean of UP College of Fine Arts discussed “Arts in Engineering”. Prof. Rosete pointed out how design, which he described as the ‘integration of engineering process with an art lens’, perfectly reflects how engineering is not just about creation and durability but also aesthetic. Prof. Rosete posits that better appreciation of engineering can be found by rediscovering the beauty in designs.

Meanwhile, Prof. Jerry R. Yapo --- Director of the Office for Initiatives in Culture and the Arts of the University of the Philippines – Los Baňos, explored the topic “Humanities in Engineering”. Prof. Yapo argued that it is creativity that fuels innovation. He further explained this idea by providing examples wherein engineers and scientists found inspiration in human experiences. He also emphasized that despite the differing natures of engineering and humanities, these fields meet on a point of convergence characterized by discovery, wonderment and imagination.

The last plenary talk was that of Fr. Bienvenido F. Nebres --- Former President of Ateneo de Manila University. Fr. Nebres grounded his discussion with the two engineering challenges (mass transportation systems and managing water) that greatly affects the Philippine society today. Fr. Nebres explained how the demand for adjustments from communities, new engineering and technical expertise and leadership competence shall serve as components in preparing for the future.
After the plenary talks, participants where given the chance to raise questions to and share their insights with the speakers. A vast array of inquiries emanating from personal experiences to larger societal pictures were asked. Members of the Ateneo Blue Symphony Orchestra also entertained the audience with their rendition of Filipino songs *Leron-leron Sinta* and *Limang Dipang Tao* during their intermission.

Dr. Elepaño and Dr. Tanchuling facilitated the Open Forum.

Engr. Albert Mariño, Deputy Director of the Science Education Institute, delivered the Closing Remarks in behalf of Dir. Josette T. Biyo. In his speech, Engr. Mariño pledged SEI's continuous support to the ERDT program and its scholars.

Asec. Rafaelita Aldaba explaining the outline of her presentation.

Delegates from AUN/SEED-Net member institutions posing for a group photo with Dr. De Leon and Dr. Pedrasa.

The plenary speech of ERDT Visiting Professor, Dr. Mikio Umeda jumpstarted the second day of the Conference. Dr. Umeda started by contextualizing and characterizing farming and agriculture in Asia. He also presented a comparative analysis on the economic impact of the different methods (mechanized and smart) of farming.

Dr. Nobumasa Sekishita, another ERDT Visiting Professor, followed and talked about the "Hydrodynamics Characteristics of Fish Fins and Bodies for Developing a Fish Robot".
The third speaker for the second day of the Conference was Prof. Jun Tanimoto. Dr. Tanimoto provided a "*Statistical Analysis on the Effect of Outdoor Air Temperature History on Occupants*" Usage of Air-Conditioners in Dwellings". He concluded that the weighted mean of outdoor temperature explains air conditioning usage well.

(L-R) Dr. Menandro Berana, Dr. Mikio Umeda, Dr. Nobumasa Sekishita, Dr. Jun Tanimoto and Dr. Michael Pedrasa during the presentation of certificates and tokens of appreciation.

Similar to the first day, afternoon parallel sessions followed the morning plenary. The topics covered in the second day are: (1) *Energy Resource Assessment, Power Systems, Modeling and Planning*, (2) *Information and Communications Technology, (3) Materials for Energy, Electronics and Environment*, (3) *Structural, Agricultural and Environmental Materials*, (4) *Alternative Fuels/Energy,* and (5) *Environment, Infrastructure and Agricultural Applications.*

The participants convened to the plenary hall once more after the parallel sessions for the announcement of best papers and the closing ceremonies.

In his Closing Address, Engr. Albert Mariño explained SEI's desire to continue to empower its scholars through supporting similar activities where they can be exposed to different learning opportunities. Moreover, Engr. Mariño also encouraged the participants to reflect on the Conference's theme, "Engineering for Humanity" and to contribute towards the advancement of the country and the Filipino people's interest.

Dr. Menandro Berana and Dr. Michael Angelo Pedrasa announced the "best paper" awardees and formally closed the event by thanking the participants and the organizers.

2018 ERDT TECHNOLOGY BENCHMARKING INITIATIVE

The ERDT Steering Committee Members with the Deputy Director of the DOST Science Education Institute and one of the Private Sector Representatives of the ERDT Program Advisory Council embarked on a Technology Benchmarking Initiative. The delegation was divided into three groups that explored Technologies and innovations on agricultural engineering by visiting host Institutions in Israel and Japan.

Group	Name	Designation
Group A	Dr. Menandro Berana	Project Leader, UPD
	Dr. Gonzalo Serafica	Private Sector Representative, PAC
	Atty. Edgar Alan Donasco	Project Leader, MSU-IIT
	Dr. Jonathan Salvacion	Project Leader, MU
	Dr. Evelyn Taboada	Project Leader, USC
Group B	Dr. Rizalinda De Leon	Program Leader, ERDT
	Engr. Albert Mariño	Deputy Director, SEI
	Dr. Ireneo Agulto	Project Leader, CLSU
	Dr. Jonathan Dungca	Project Leader, DLSU
Group C	Dr. Arnold Elepaño	Project Leader, UPLB
	Dr. Evangeline Bautista	Project Leader, ADMU
	Dr. Roberto Malaluan	Project Coordinator, MSU-IIT
	Engr. Ricardo Fornis	Project Coordinator, USC
	Dr. Juanito Batalon	Director, PCAARRD-ARMRD

Table 1. Composition of the TBI Groups

The objectives of the tours were defined according to the focal points of each group. Focusing on "*agriculture under arid conditions and on marginal soils*" and "*water management and utilization*", Group A visited Technion (Israel Institute of Science and Technology), Agricultural Research Organization-Volcani Center, and Afikey Emek Hefer Association. For Group B that visited Japan Plant Factory Association and Hokkaido University, the area of focus was "plant nutrition and horticulture". Lastly, Group C met with researchers and checked out the laboratories of Nara Institute of Science and Technology, Kyoto University, and Yanmar Co., Ltd. to learn new technologies and innovations on "plant biology and agricultural machineries".

Country	Host Institution	Area/s of Focus
Israel	Technion (Israel Institute of Science and Technology)	Agriculture under arid conditions and on marginal soils; & water management and utilization for farming
	Agricultural Research Organization - Volcani Center	
	Afikey Emek Hefer Association	
Japan	Japan Plant Factory Association	Plant nutrition and horticulture
	Hokkaido University	
	Nara Institute of Science and Technology	Plant biology and agricultural machineries
	Kyoto University	
	Yanmar Co., Ltd.	

Table 2. Host Institutions Benchmarked by the ERDT Delegation

Figure 1. Group A posed for a group photo with the Executive Director of Agricultural Research Organization – Volcani Center.

ANNEXES

LIST OF 2018 MS GRADUATES

Name	Degree	Field of Study	Date of Conferment	Title of Thesis / Dissertation
ATENEO DE MANILA UNIVERSITY				
David, Apollo Ian C.	MS	Electronics Engineering	May 2018	Presence or Absence of Fusarium Oxysporium F. Sp. Cubense Tropical Race 4 (TR4) Classification Using Machine Learning Methods on Soil Properties
Domingo, Annael J.	MS	Electronics Engineering	May 2018	Short-term wind speed forecasting: a machine learning-based predictive analytics
Flavier, Javier Teodoro E.	MS	Computer Science	May 2018	Reducing the Teknomo-Fernandez pixel processing through scale invariant feature transform (sift) descriptor matching
Kwong, John Cris T.	MS	Electronics Engineering	May 2018	Emotion Recognition via facial Expressions: Utilization of Numerous Feature Descriptors in Different Machine Learning Classification Algorithms
Lim, Hadrian Paulo M.	MS	Computer Science	May 2018	Microscopic Fusarium Detection and Verification with Convolutional Neural Networks
Ngo, Genevieve C.	MS	Electronics Engineering	May 2018	Automated Photovoltaic Defect Detection Software System
Saavedra, Miguel Zenon Nicanor L.	MS	Computer Science	May 2018	Towards Large Scale Packet Capture and Network Flow Analysis on Hadoop
Serato, Johanna Lindsey G.	MS	Electronics Engineering	May 2018	Audio Data Analysis as Diagnostic Aid for Detection of Respiratory Disorders using PCA-Data Mining
Tan, Marion Ivan L.	MS	Electronics Engineering	May 2018	Power Loss Measurement for MOSFETs Used in ESCs
CENTRAL LUZON STATE UNIVERSITY				
Abon, John Eric O.	MS	Agricultural Engineering	February 2018	Rice Straw Carbonizer for Biochar Production
Ariola, Citadel C.	MS	Agricultural Engineering	June 2018	Indoor Farming Technology for Green Ice Lettuce Production (Lactuca sativa L.) Using Different Photoperiods and Chamber Temperatures
Borres, Eligio C. Jr.	MS	Agricultural Engineering	June 2018	Design and Automation of a Solar-Power Floating Type Aeration System to Improve Water Quality in Pond
Caberto, Mary Jane P.	MS	Agricultural Engineering	February 2018	Design, Fabrication and Performance, Evaluation of a Sweet Sorghum Leaf Stripper

De La Rama, Edgar Martin Y, Jr.	MS	Agricultural Engineering	June 2018	Synthesis, Characterization, Fabrication and Application of Electrospun Nanofiber Composite: A Potential Biomaterials Against Black Mold Rot of Onions
Dominguez, Erickson N.	MS	Agricultural Engineering	February 2018	Small-Scale Demucilager Machine for Arabica Coffee (Coffea arabica)
Fenangad, Dannielle B.	MS	Agricultural Engineering	February 2018	Application of Indoor Farming Technology for Lettuce (Lactuca sativa L.) Production
Galad, Marlon N.	MS	Agricultural Engineering	February 2018	Design, Fabrication and Performance Evaluation of a Mobile Substrate Maker Machine for Mushroom Production
Hernandez, Francis U.	MS	Agricultural Engineering	June 2018	Sub-surface Drip and Furrow Irrigation Methods for Sugarcane Nursery Production
Jimenez, Jessica P.	MS	Agricultural Engineering	February 2018	Development of a Methodology for Assessing the Sustainability of Hand-dug Wells
Laita, Rosalinda P.	MS	Agricultural Engineering	February 2018	Design, Fabrication and Performance Evaluation of a Walking-Type Tractor Driven Potato Harvester
Ligisan, Aileen R.	MS	Agricultural Engineering	February 2018	Optimization of Bioethanol Production from Robusta Coffee Pulp
Mina, Allyson T.	MS	Agricultural Engineering	February 2018	Convection Drying of Mushroom (Pleurotus florida) using Solar Thermal Heat Pipe
Pascual, Christopher S.	MS	Agricultural Engineering	June 2018	Rootzone Cooling of Aeroponically-grown Strawberry Plant Using Ground Heat Exchange Under Tropical Greenhouse Condition
Peneyra, Josue L.	MS	Agricultural Engineering	February 2018	Development of Rice Straw Twinning Machine
Ramoso, Jenisa K.	MS	Agricultural Engineering	June 2018	Optimization of Parameters to be Used in Operating a Rotary Dryer for Coconut Sap Sugar Production
Semilla, Mary Grace N.	MS	Agricultural Engineering	February 2018	Indoor Production of Loose-Leaf Lettuce (Lactuca sativa L) at Varying Light Intensity and Chamber Temperature
Titiwa, Kevin P.	MS	Agricultural Engineering	June 2018	Development of a Single-Row Potato Haulm Cutter
Vergara, Roger R.	MS	Agricultural Engineering	June 2018	Design, Fabrication and Performance Evaluation of a Tractor-Mounted Three-Row Sugarcane Fertilizer Applicator

Villaroman, Cresan Joy V.	MS	Agricultural Engineering	February 2018	Atmometer-based Irrigation Scheduling System for Drip-Irrigation (Allium cepa)
Villota, Shiela Marie A.	MS	Agricultural Engineering	February 2018	Cocoa (Theobroma cacao L.) as Precursor for Activated Carbon Production under Microwave-Assisted Pyrolysis
DE LA SALLE UNIVERSITY				
Alba, Yugel Rudolf R.	MS	Electronics Engineering	4th Quarter 2017-2018 April - June 2018	Adaptive Traffic Light Scheduling System based on Congested Vehicle Queue Length using Image Processing by Median Stacking
Ang, Daniel Laurence C.	MS	Civil Engineering	August 2018	Optimization of Traffic Signal Controls at Exit Points of the Metro Manila Skyway and Adjoining Roads in Makati City
Caychingco, Jedidiah Ysamm L.	MS	Computer Science	April 2018	Detecting DDoS Attacks Using a Hybrid Model
Chan, Lynette Danielle K.	MS	Computer Science	August 2018	Towards a Conversational Agent for Story Reading
Chiu, Glenn Matthew K.	MS	Mechanical Engineering	December 2018	Design And Analysis Of Agitator Types In A Pressurized Batch Reactor For In-Situ Transesterification
Cotoco, Ezekiel Karl A.	MS	Manufacturing Engineering and Management	August 2018	Design and Development of A Bamboo Plant Growth Chamber
Cruz, Joseph Benjamin C.	MS	Civil Engineering	April 2018	An Investigation on the Effects of 24 Hour Exposure of Sodium Hydroxide with 15% Concentration on Crumb Rubber as Partial Replacement for Coarse Aggregates in Concrete Mixtures
Dela Cerna, Kimmie Mae S.	MS	Chemical Engineering	August 2018	Development Of Nanosilver-Coated Geopolymer Beads (Aggp) From Fly Ash And Baluko Shells For Antimicrobial Applications
Ibarrientos, Chester Paul H.	MS	Computer Science	August 2018	Automatic Calibration and Speed Estimation on Multi-Directional Vehicle Flow
Kwok, Malcolm Leeland P.	MS	Electronics & Communications Engineering	August 2018	CMOS Design of a Low Voltage AC-DC Switched Mode Power Supply for Energy Harvesting Applications
Lao, Selwyn Jenson C.	MS	Manufacturing Engineering and Management	August 2018	Fuzzy Based Automated Irrigation System with Fertigation

Lazarte, John Paolo L.	MS	Chemical Engineering		Synthesis and Performance Analysis of Reduced Graphene Oxide/Titanium Dioxide Nanotubes Capacitive Deionization of Electrode Composite for Water Treatment
Lim, Nino Rigo Emil G.	MS	Mechanical Engineering	August 2018	Design Criteria Assessment For Ball Grid Array Semiconductor Packaging Based On Thermomechanical Simulation And Crack Analysis
Luta, Raphael Benedict G.	MS	Manufacturing Engineering and Management	August 2018	Development of an Intelligent, Knowledge-based Hospital Triaging System for Desktop and Mobile Devices
Magdaong, Jeremy Jay B.	MS	Mechanical Engineering	August 2018	Development Of A Predictive Aeration Strategy For Microalgae Cultivation In Photobioreactors
Ong, Anthony Christopher L.	MS	Manufacturing Engineering and Management	August 2018	A Monitoring of Distributed Energy Resource (DER) Using Off-Grid Solar Power System for Smart Farm
Padilla, Mark Lester F.	MS	Manufacturing Engineering and Management	August 2018	Formation-based 3D Mapping of Micro Aerial Vehicles
Roque, Marielle Anne P.	MS	Electronics & Communications Engineering	April 2018	Optimization of Validity of Indices in Determining the Number of Wireless Mulitpath Propagation Clusters
Salvame, Erjosh O.	MS	Civil Engineering	August 2018	A Study of Condominium Property Prices Along LRT 1 in Metro Manila
Samarita, John Carlo R.	MS	Civil Engineering	August 2018	Investigating The Effect Of Geotextile As Reinforcement On The Bearing Capacity Of Granular Soil
Soliman, Jimwell L.	MS	Mechanical Engineering	August 2018	Assessing Energy Security Cost Of The Transport Sector
Tapiador. Jed I.	MS	Mechanical Engineering	December 2018	Optimal Design Of Permanent Magnet Direct-Drive Wind Turbine Using Finite Element Analysis And Genetic Algorithm
Temew, Kelly C.	MS	Civil Engineering	December 2018	A Study on the Effect of Construction Joints on the Corrosion of Steel in Fly Ash Concrete Beams mixed with Seawater
Torres, John Ephraim E.	MS	Chemical Engineering	December 2018	Life Cycle Inventory Analysis of Carbon Nanotubes Production from Biomass Pyrolysis
Ver, Andrea Nicole O.	MS	Computer Science	April 2018	Tracking Human Mobility Using Twitter Natural Language Processing Techniques

MAPUA UNIVERSITY				
Bartolome, Gee Jay C.	MS	Environmental Engineering	4th Quarter 2017-2018 April - June 2018	Bioenergy Generation and Chemical Oxygen Demand Reduction in Dual-Chamber Microbial Fuel Cell Using Meat Processing Wastewater
Canilla, Kristine Clarisse S.	MS	Civil Engineering	4th Quarter 2017-2018 April - June 2018	Development of Environment Management System Assessment Model Instrument for Construction Firms in Palawan based on ISO 14001:2015 Standard
Cuanang, Joane Rose C.	MS	Chemical Engineering	3rd Quarter 2017-2018 January - March 2018	Photocatalytic Degradation of 1-Naphthyl Methyl Carbamate (Carbaryl) in Batch UV LED Reactor using Titanium Dioxide as Catalyst
Dagarada, Ailyn Kate E.	MS	Civil Engineering	4th Quarter 2017-2018 April - June 2018	Assessment of the Mechanical Performance of Lightweight Concrete Reinforced with Pandan Fiber (Pandanus Tectorius) Using Artificial Neural Network (ANN) Model
De Vera, Jacqueline S.	MS	Materials Science and Engineering	4th Quarter 2017-2018 April - June 2018	Molecular Design and Fabrication of a Universal Coating of Materials with Antibacterial and Self-cleaning Properties
Halabaso, Eric R.	MS	Chemical Engineering	3rd Quarter 2017-2018 January - March 2018	Slow Pyrolysis of Kitchen Waste: Investigation of Pyrolysis Temperature Effects and Evaluation of Biochar Products
Macmac, Jaysoon D.	MS	Civil Engineering	4th Quarter 2017-2018 April - June 2018	Investigation of Pull-out Performance of Concrete with Threaded Anchor Bolts Influenced by Cogon Grass Fiber (Imperata Cylindrica L.) Using Artificial Neural Network
Marquez, Jazmine Aiya D.	MS	Chemical Engineering	4th Quarter 2017-2018 April - June 2018	Improving Pervaporation Performance of PVDF-based Hollow Fiber Membranes using Co-Solvent Assisted Interfacial Polymerization
Mistal, Ma. Lourdes L.	MS	Computer Engineering	3rd Quarter 2017-2018 January - March 2018	Early Warning Device for Brown Planthopper Detection in Palay Using Wireless Sensor Networks
Palaganas, Napolabel B.	MS	Materials Science and Engineering	4th Quarter 2017-2018 April - June 2018	3D Printing of Photocurable Cellulose Nanocrystal Composite for Fabrication of Complex Architectures via Stereolithography
Quintana, Alfons Mark Martin Y.	MS	Chemical Engineering	4th Quarter 2017-2018 April - June 2018	Development of Technical Safety Layouts using CFD Modelling of CO2 Dispersions from Bioethanol Fermentor Tanks
Villapa, John Bryan C.	MS	Civil Engineering	4th Quarter 2017-2018 April - June 2018	Geopolymerization Method to Modify the Structural Properties Silty Clay Utilizing Coconut Husk Ash, Rice Husk and Sea water for Wall Construction

MINDANAO STATE UNIVERSITY – ILIGAN INSTITUTE OF TECHNOLOGY				
Abao, Roland P.	MS	Computer Applications	June 2018	Design, development, and evaluation of Foodgo: A Mobile application using situated analytics
Albufera, Aiza B.	MS	Mechanical Engineering	June 2018	Computational Structural Integrity Analyses of a Canard Box-Wing Unmanned Aerial Vehicle (UAV) Paltform for Disaster Management and Surveillance Applications
Aleluya, Earl Ryan M.	MS	Computer Applications	June 2018	Faceture ID: Face and Hand Gesture Multi-Factor Authentication Using Deep Learning
Arellano, Aileen Chris C.	MS	Electrical Engineering	June 2018	Buck Converter with Dead-Time Control and Power-down System for WSN in 65nm CMOS Process
Berido, Rovil S.	MS	Electrical Engineering	June 2018	High Power Conversion Efficiency Adaptive Reconfigurable Active Voltage Rectifier/Voltage Doubler for Implantable Medical Devices
Carranza, Wencel jean S.	MS	Computer Applications	June 2018	Aerial Photography and Real-Time Video Capture for non-rigid airship surveillance system
Empas, Paul Emmanuel G.	MS	Electrical Engineering	January 2019	A Linearized Cascode Shut-off Low-Noise Amplifier for Carrier Aggregation Application
Frias, Sheila N.	MS	Civil Engineering	June 2018	A Simulation Study on the Impacts of Different Rainfall Scenarios on the Effectives of the Flood Control Structures of Mandulog River, Iligan City
Gicum, Apollo Clyde U.	MS	Mechanical Engineering	June 2018	Dynamic Modeling and Stability Analysis of a Box-wing Wing-in-surface effect (WISE) Hybrid Marine-Air Vehicle for Rapid and Efficient Transport System
Gocela, Jean Claude D.	MS	Mechanical Engineering	June 2018	Conceptual Design and Aerodynamic Performance for Rapid and Efficient Inter-island Transportation
Intong-Cabalo, Lori-Ann S.	MS	Material Science Engineering	January 2019	Controlled Permeability and Strength of Redclay Ceramics Tempered with Iron Rich Oxide Materials
Jamboy, Novy Liza S.	MS	Civil Engineering	January 2018	Bearing Response and Flexural Strength of Bolted Carbon Fiber Reinforced Polymer (CFRP) Strengthened Steel I-Beam
Macadato, Muhammad Khalifah R.	MS	Mechanical Engineering	January 2019	Computational Aerodynamic Performance Analyses of a Canard Box-wing Unmanned Aerial Vehicle (UAV) for Aerial Surveillance and Similar Applications
Magadan, Kriztine O.	MS	Material Science Engineering	June 2018	Development and Optimization of the Physical Properties of Water-blown Rigid Polyurethane Foams Produced from Rice Straw-based Polyols

Maglinte, Kevin O.	MS	Electrical Engineering	June 2018	An Innovative Layout Generator for FPGA IP Physical Design Integration
Mejias, Miriam A.	MS	Computer Applications	June 2018	Geolocation of Small-scale Fishermen boats with emergency communication using Sub-1 Ghz Network
Pongcol, Daryl P.	MS	Computer Applications	June 2018	CloudII- A Cross-platform application and a raspberry Pi Router for multiple Midi Sources
Ruda, Rosal Jane G.	MS	Material Science Engineering	June 2018	Liquefaction of Rice Straw by Crude Glycerol for Polyol Production
Salem, Arcel R.	MS	Electrical Engineering	June 2018	A Fabric IP Netlist Generator for a Compiler-Approach to Fabric Integration
Panorel, Peter A.	MS	Mechanical Engineering	January 2019	Experimental and Computational Investigation of corrugated Dragonfly Aerofoil Performance in Small Wind Turbine Applications
Truza, Shahani G.	MS	Mechanical Engineering	January 2019	Rainfall's Effect on Solar Pond Integrity: Issues on Clarity and Upper Gradient Sta
Zoleta, Joshua B.	MS	Material Science Engineering	January 2019	CEO2 - Dolomite as Fire Retardant Additive on Ammonium Polyphosphate-Epandable Graphite-Melamine (APP-EG-MEL) Intumescent Coating System for I-Beam Steel Substrate
UNIVERSITY OF THE PHILIPPINES – DILIMAN				
Alfeche, Lalaine Joan V.	MS	Chemical Engineering	May 2018	Physical Properties of neoprene based solvent adhesive blended with TAPE
Almajose, Allan Paolo L.	MS	Chemical Engineering	July 2018	Development of a Thermodynamically consistent Alpha Function for the Patel-Teja-Valderrama Equation of State
Almaquer, Francis Eric P.	MS	Chemical Engineering	May 2018	Citrate-stabilized Silver Nanoparticles for Copper (II) Detection in Hard Water
Aragua, Richelle A	MS	Environmental Engineering	May 2018	Optimization of Operating on the Recovery of Copper Ions from Vetiver Grass [Chrysopogon zizaniodes (L.) Roberty] Biomass by Leaching Process
Austria, Darrwin Dearest C.	MS	Computer Science	May 2018	An Algorithm for Generating Random Graphs with Prescribed Degree Sequence
Ayapana, Chielo Marie N.	MS	Chemical Engineering	December 2018	Developing a Gum Arabic - Citric Acid Bioadhesive for Liquid Bandage Application

Battung, Elaine Joy T.	MS	Environmental Engineering	May 2018	Degration of imidacloprid by fluidized-bed Fenton process
Bondad, Cheassylynne B.	MS	Environmental Engineering	May 2018	Effects of Varying Pretreatment Conditions on Temperature-Phased Anaerobic Co-Digestion of Sewage Sluge and Chlorella Vulgaris
Capati, Randel M.	MS	Electrical Engineering	May 2018	Trajectory Tracking for an Autonomous Passenger Vehicle
Caramoan, Ria M.	MS	Environmental Engineering	May 2018	Assessment and Prediction of Vehicular Emissions in Commonwealth Avenue, Quezon City as Various Policy and Technology Scenarios Using Simple Interactive Model (SIM-air)
Comia, Jose Jr. R.	MS	Environmental Engineering	May 2018	Degration of Gaseous VOCs by Advanced Oxidation processes: UV-Assisted Ozonation and Ultrasonication
Cruz, Louie Angelo D.	MS	Energy Engineering	May 2018	Improving the Stabilityof Diesel Emulsions with High Pyrolysis Bio-Oil Content by Alcohol Co-Surfactants and High Shear Mixing Strategies
De La Cruz, Ren Tristan A.	MS	Computer Science	May 2018	On String Languages Generated by Spiking Neural P Systems with Structural Plasticity
Dela Cruz, Ma. Ivy S.	MS	Environmental Engineering	May 2018	Carbon dots from polyurethane for pH and 4-nitrophenol sensing and selective detection of silver (I) ion
De Leon, Mark Jeffry D.	MS	Materials Science and Engineering	July 2018	Development of a Cold Atmospheric Pressure Plasma Jet for Surface Treatment Applications
Feliciano, Reyson M.	MS	Environmental Engineering	May 2018	Solvent-desorption and Regeneration of Neutral, Basic and Acidic Activated Alumina from Desulfurization of Dibenzothiophene Sulfone
Gandionco, Karl A.	MS	Chemical Engineering	May 2018	Fabrication, Characterization and Testing of Activated Carbon-Nickel (II) Oxide Electrodes for Capacitive Deionization of Aqueous Sodium Chloride Solution
Garcia, Renz Marion G.	MS	Materials Science and Engineering	May 2018	Preparation and Characterization of Ni/ScSZ as Composite Electrode Material for Solid Oxide Fuel Cell and Electrolysis Cell Applications
Garcia, Vince Carlo C.	MS	Environmental Engineering	May 2018	Fate of Bupropion and Paroxetine in Aerobic Conventional and Nitrifying Activated Sludge
Ibañez, Roderaid T.	MS	Energy Engineering	May 2018	Techno-Economic Feasibility Study of tidal Power Plant with seawater Pumped Storage in the Philippines

Imperial, James Francis L.	MS	Materials Science and Engineering	May 2018	Fabrication and Characterization of Nickel and Yttria-Stabilized Zirconia Composite Electrode Materials
Labayan, Luchie Marie A.	MS	Industrial Engineering	May 2018	A Grey Multi-Objective Programming Model Integration of Inventory Uncertainty Into the Dynamic Inoperability Input-Output Model
Latag, Glenn V.	MS	Materials Science and Engineering	May 2018	Fabrication of Electrospun Chitosan/Poly(vinyl alcohol) Nanofiber mats and Effects of RF Plasma Treatment
Lidasan, Jun Jeffri B.	MS	Energy Engineering	May 2018	Nickel Hydroxide Sanostructures As Anode Catalyst For Direct Ethanol Fuel Cells
Lodo, Marjorie Jane L.	MS	Environmental Engineering	May 2018	Adsorption, Elution and Stabilization of Mercury from Aqueous Cyanide Solutions and Recyclability of the Used Fe-MMT Adsorbent Materials
Lopez, Edgar Clyde R.	MS	Chemical Engineering	December 2018	Silver-doped Titanium Dioxide Nanotubes for Photoelectrocatalytic Degradation of Acid Orange 52
Lositaño, Ian Carlo M.	MS	Energy Engineering	May 2018	Performance Effects of Tubercle Leading Edge (TLE) on a Cambered Airfoil Profile for Vertical Axis Wind Turbines (VAWTs) in Steady Wind
Maandal, Gerard Lorenz D.	MS	Energy Engineering	May 2018	Techno-Economic Assessment of Offshore Wind Energy in the Philippines
Mamaril, Gil Stefan S.	MS	Environmental Engineering	May 2018	Facile Synthesis of Nitrogen and Fluorine Doped 3-Dimensional Reduced Graphene Oxide Electrode for the Removal of Copper Ions by Capacitive Deionized
Marcelo, Eisson M.	MS	Mechanical Engineering	May 2018	Wear rate Analysis of Main Blades of a Rotary Cutting Machine
Moreno, Imee E.	MS	Environmental Engineering	May 2018	Forecasting of Daily and Next Day's Particulate Matter (PM2 5) Concentration levels in Quezon City using Models based on Adaptive Neuro-Fuzzy Inference System (ANFIS)
Muega, Sherwin C.	MS	Environmental Engineering	May 2018	Comparative Analysis of Carbon dots from Bamboo, Coconut and Mahogany for Copper (II) ion detection
Pagaduan, James Nicolas M.	MS	Materials Science and Engineering	May 2018	Fabrication and characterization of electrospun cellulose-reinforced polycaprolactone nanofibrous membrane filled with moringa oleifera leaf powder
Pascasio, Jethro Daniel A.	MS	Energy Engineering	December 2018	High Renewable Energy (Solar and Wind)Penetration Hybrid Energy Systems in Off-Grid Islands for Deep Decarbonization

Pascual, Juan Inocencio M.	MS	Metallurgical Engineering	July 2018	Electrophoretic Measurement of Zeta Potential of Needle-Generated Gas Bubble in Aqueous Solutions in the Presence of Collectors
Pinton, Noel Jeffrey P.	MS	Chemical Engineering	May 2018	Effect of Replacing Carbon Black with Surface-Modified Natural Feldspar and Silica Clay on the Curing Characteristics and Mechanical Properties of Natural Rubber Composites
Rabongue, Anamie	MS	Environmental Engineering	May 2018	Cartap removal Through Penton Oxidation in a Fluidized-Bed Reactor
Rayo, Joshua Frankie B.	MS	Computer Science	May 2018	Stochastic Dynamics of Storm Surge With Stable Noise
Sablas, Michael M.	MS	Environmental Engineering	December 2018	Removal of Imidacloprid Pesticide by Catalytic Percarbonate Oxidation in Homogenous-Batch and Heterogeneous Fluidized Bed Reactions
Saladaga, Imee A.	MS	Energy Engineering	July 2018	Poly (oligoethylene glycol methacrylate) Based Polymer Electrolyte for Dye Sensitized Solar Cell Application
Salvador, Ruben W. Jr.	MS	Energy Engineering	July 2018	Facile Synthesis of a CoFe2O4-doped tin Disulfide in Reduced Graphene Oxide Matrix as Node Material for Lithium Ion Batteries
San Buenaventura, Charlene V.	MS	Electrical Engineering	May 2018	Deep Learning Framework for Human Activity Recognition Based on Sensor Fusion in Smartphones
Santos, Ren Zedec S.	MS	Electrical Engineering	May 2018	Distribution System State Estimator Using SCADA and PMU Measurement
Sioson, Arianne S.	MS	Environmental Engineering	May 2018	CO2 Capture and Utilization by KOH Absorption and CaCO3 Granulation in the Fluidized-Bed Reactor
Tiria, John Andrew A.	MS	Environmental Engineering	May 2018	Utilization of Granulated Coal Ash (GCA) for Treatment of Nutrient-rich Wastewater and Improvement of Water Quality
Tolentino, Mark Anthony G.	MS	Energy Engineering	July 2018	Modeling of Nutrients in Bued River with Point and Pint Sources of Pollution
Uy, Glizelda L.	MS	Mechanical Engineering	May 2018	Structural Analysis of Horizontal Axis Tidal Turbine (HATT) Blade with Varying Material and Laminate Structures
Valerio, John Kenneth C.	MS	Materials Science and Engineering	July 2018	Microwave Plasma Activation and Acrylic Acid Grafting of Polytetrafluoroethylene Surfaces for Biomedical Applications

UNIVERSITY OF THE PHILIPPINES – LOS BAÑOS				
Adrias, Paul Jervin V.	MS	Agricultural Engineering	June 2018	Effect of speed and flow rate on harvesting Green Microalgae by Bowl Centrifugation
Ancheta, Romeo G.	MS	Agricultural Engineering	January 2018	Temperature Automation and Optimization of the UPLB Bean Roaster for Soybean
Borja, Adrian A.	MS	Agricultural Engineering	January 2018	A Machine Vision Assisted Mechatronic Seed Meter for Precision Planting of Corn
Dacones, Renmar James P.	MS	Agricultural Engineering	Candidate for Graduation (1st Sem. '18-'19)	Low-Cost Artificial Fruit for Impact and Vibration Measurement
Dal-Uyen, Delilah P.	MS	Agricultural Engineering	June 2018	Development of a microcontroller-based control system for safe grain storage in Silo
De Padua, Victor Antonio N.	MS	Agricultural Engineering	January 2018	Design, Fabrication, and Evaluation of Small-Scale Cocoa Bean Solar Fermenter and Dryer with Latent Heat Storage
Llaban, Audry	MS	Agricultural Engineering	January 2018	Water Supply and Demand Assessment for Optimum Cropping Pattern Development of National Irrigation Systems in Bukidnon, Philippines.
Limbo, Mark Twain A.	MS	Agricultural Engineering	June 2018	Development of an Arduino-Based Pneumatic seeder for lettuce (Lactuca sativa L.) Production
Napay, Mary Angeline O.	MS	Agricultural Engineering	June 2018	Flood Simulation at Quinali a watershed Flood plain in Albay Philippines
Rabanera, Jennyfer D.	MS	Agricultural Engineering	Candidate for Graduation (1st Sem. '18-'19)	Determination of water activity of peanut kernel using near-infrared Hyperspectral Imaging Technology
Rantael, Rogelio O. Jr.	MS	Chemical Engineering	June 2018	Parametric and optimization study of a laboratory-scale top lift updraft gasifier using (T-LUD) using Buyo-Buyo (Piper aduncum L.) as feedstock for Gasification
Rosales, Rowena P.	MS	Agrometeorology	June 2018	Development of an Arduino-Based Evapotranspiration Monitoring system
Ruzgal, Job Jonas C.	MS	Agricultural Engineering	Candidate for Graduation (1st Sem. '18-'19)	Development of Nanosilica-Structured Hydrophobic Coating for Tillage implements

UNIVERSITY OF SAN CARLOS				
Bicoy, Jay Ryan Dalman	ME	Electronics and Communications Engineering	March 2018	A Pybrain - Based Neural Network Algorithm for Dryness Estimation of Mango Seeds in a Greenhouse Solar Drier
Cabatingan, Erwin O.	ME	Electrical Engineering	March 2018	Development of an Energy Management System for Educational Institutions
Cabilo, Mark Anthony B.	ME	Electronics and Communications Engineering	March 2018	Demand Response of an Off-Grid Solar Photovoltaic System Using a Wireless Sensor Network
Diapolet, Herbert M.	ME	Civil Engineering	March 2018	Performance-based seismic assessment of existing reinforced concrete structures using nonlinear dynamic analysis: A case of Marcelo Fernan Palace of Justice
Narvios, Wilen Melsedec O.	ME	Electrical Engineering	March 2018	A Pilot Study for the Development of an IoT based Fire Alarm Monitoring System in the School of Engineering at the University of San Carlos
Baygan, Gabriel Dominic R.	ME	Mechanical Engineering	December 2018	Coconut Shell Pyrolysis for Optimum Charcoal Production
Brusas, Jonathan C.	ME	Mechanical Engineering	December 2018	Carbon Dioxide and Temperature Reduction of Diesel Exhaust using Soil - Based Botanical Biofilter
Cabaña, Danielle D.	ME	Mechanical Engineering	December 2018	Performance Comparison of NACA0018and Dragonfly Airfoil of a Gorlov - Hybrid Helical Wind Turbine
Laranjo, Junmar O.	MS	Mechanical Engineering	December 2018	Pyrolysis of Chicken Manure for Possible Bio - Fuel Production
Lariosa, Louie A.	MS	Mechanical Engineering	December 2018	Assessment for Energy Conservation Opportunities of Lawrence Bunzel and Philip Van Engelen Buildings in the University of San Carlos - Technological Center
Manilhig, Michael G.	ME	Mechanical Engineering	December 2018	Tar Removal by Acoustic Induced Heat Exchanger
Zamora, Gelly Ann K.	MS	Electrical Engineering	December 2018	Development of Philippine Specific Electrical Energy Poverty Metric Based on ESMAP's Muti - Tier Framework for Energy Access

LIST OF 2018 PhD GRADUATES

Name	Degree	Field of Study	Date of Conferment	Title of Thesis/Dissertation
ATENEO DE MANILA UNIVERSITY				
Banawan, Michelle P.	PhD	Computer Science	May 2018	Detecting Student Carefulness in an Educational Game for Physics
DE LA SALLE UNIVERSITY				
Culibrina, Francisco B.	PhD	Electronics & Communications Engineering	August 2018	Smart Farm Using Wireless Sensor Network for Data Acquisition and Power Control Distribution
Roquel, Krister Ian Daniel Z.	PhD	Civil Engineering	August 2018	Philippine Greater Capital Region Logistics Optimization
Sy, Armyn C.	PhD	Electronics & Communications Engineering	April 2018	Machine Learning Model Of An EMG Motion Intention Detection System For Robotic Rehabilitation Control
Uy, Erica Elice S.	PhD	Civil Engineering	August 2018	A Protocol for Non-Contact Measurement Technique Applied for Cyclic Triaxial Test
MAPUA UNIVERSITY				
Beltran, Angelo Jr. A.	PhD	Electronics Engineering	March 2018	Design of a Maximum Power Point Tracking Control Using Fuzzy Logic and Particle Swarm Optimization for Standalone Photovoltaic System
Millare, Jeremiah	PhD	Materials Science and Engineering	October 2018	Dispersion and Electrokinetics of Nanobubbles in Ethanol-Water Mixtures: Solute Effects and Nanoparticle Interactions via Solvent Replacement Method
MINDANAO STATE UNIVERSITY – ILIGAN INSTITUTE OF TECHNOLOGY				
Arca, Ma. Catherine Q.	DOE	Civil Engineering	January 2018	An Improved Slope Stability Assessment Using Limit Equilibrium Method (LEM) with GIS Application for Landslide Mitigation of Roadway Traversing Mountain Slopes: The Case in Municipality of Kitaotao, Bukidnon
Cabatchete, Arabella A.	DOE	Civil Engineering	January 2019	uPVC - Ferrocement Pipe for Exposed Pipe Application in a Water Distribution System
Daleon, Cheryl F.	DOE	Civil Engineering	January 2018	Empirical Modelling of the Soil Thickness and Strength with the Slope Angle of Mountain Slopes for Application in Deterministic Landslide Hazard Assessment: A Case of Kibawe, Bukidnon
Deiparine, Lory Liza M.	DOE	Mechanical Engineering	January 2018	" Design and Development of Power Management System for Hybrid-Powered Electric Propulsion Fixed-Wing Unmanned Aerial Vehicle
Jabile, Liezl M.	DOE	Material Science Engineering	June 2018	Development of Apatite Powder from High-calcium Luga-it Limestone (CaCo3) and Diammonium Hydrogen Phosphate (NH4)2 HPO4 (DAP) via Modified Synthesis Methods for Medical Applications
Lawas, Mishell	DOE	Mechanical Engineering	January 2018	" Sensor Fusion and Calibration of Smartphone-Integrated in a Vionics System Design for an Unmanned Aerial Vehicle "

UNIVERSITY OF THE PHILIPPINES – DILIMAN				
Alipio, Melchizedek I.	PhD	Electrical and Electronics Engineering	May 2018	RT-CaCC: Towards A cache-aware Congestion Control Mechanism in Wireless Sensor Networks
Castro, Marion Lux Y.	PhD	Environmental Engineering	May 2018	Nutrient Removal in Aquaculture Wastewater and Recovery as Microalgae (Chlorella vulgaris and Scenedesmus quadricauda) Biomass in Alginate-Chitosan Matrix
Cercado, Alberto Paulo I.	PhD	Environmental Engineering	May 2018	Microwave and Ultrasound-Assisted Transesterification of Micrialgae Using Homogeneous and Heterogeneous Alkali Catalyst
Ebrada, Leni C.	PhD	Energy Engineering	May 2018	Biomethane Production from Low-Strength Wastewater in an Upflow Anaerobic Blanket Reactor: Modelling Methane Production Kinetics using Sigmoidal Growth Functions and Determining the Effects of Hydraulic Retention Time and Reactor Height on Extracellular polymeric Substances
Ensano, Benny Marie B.	PhD	Environmental Engineering	May 2018	Treatment of Municipal wastewater using Submerged Membrane Electro-Bioreactor (SMEBR) for the Control of Membrane fouling and the Removal of Emerging Contaminants
Guerrero, Rodel D.	PhD	Chemical Engineering	May 2018	Development of Hydrogel Microparticles Based on sodium Alginate and Cellulose Derivatives for Controlled Delivery of Bovine Serum Albumin
Honra, Jaime P.	PhD	Energy Engineering	May 2018	CFD Modelling and Experimental Evaluation of a Heat-driven Ejector Refrigeration System
Lapeñas, Louie A.	PhD	Environmental Engineering	May 2018	Physico-chemical and Biological Approaches in Mcroalgal Modification for Harvesting and Heavy Metal Removal
Sapitan, Jhomee Fe (Jaja) F.	PhD	Environmental Engineering	May 2018	Recovery of Rare-Earth Metals (Yttrium and Europiun) from Waste Computer Monitor Backlight Utilizing NaCl in the Leaching Process
Villar, John Justine S.	PhD	Computer Science	May 2018	Construction of Potential Energy Hypersurfaces Through Quantum Chemical Calculations: Application to Peptide Structure Prediction
Reaño, Resmond L.	PhD	Chemical Engineering	July 2018	Selection of Aptamer Against Mycobacterium tuberculosis Specific Antigen - MTb CFP-10 for Diagnostic Applications

UNIVERSITY OF THE PHILIPPINES – LOS BAÑOS				
Fortu, Alfred F. Jr.	PhD	Agrciultural Engineering	Candidate for Graduation (1st Sem. '18-19)	Drying Kinetics and Anticoagulant Activity of Microwave-Vacuum, Dehumidifier-Air and Freeze-Dried African Night Crawler (Eudrilus-eugeniae Kinberg)
UNIVERSITY OF SAN CARLOS				
Tuballa, Maria Lorena L.	DEng	Energy Engineering	December 2018	Conceptual Smart Microgrid Framework Based on Optimal Renewable Energy Resource: Design, Modeling, and Analysis

SANDWICH PROGRAM GRADUATES

NAME	DEGREE CONFERRED	DURATION OF SANDWICH PROGRAM	UNIVERSITY	COUNTRY
Rodel Guerrero	PhD in Chemical Engineering	02/2017 - 02/2018	National University of Singapore	Singapore
Jose R. Comia, Jr.	MS in Environmental Engineering	08 2017 - 02/2018	University of Salerno	Italy
Marion Ivan L. Tan	MS in Electronics Engineering	10/2017 - 03/2018	Universitat Munchen	Germany
Erica Elice S. Uy	PhD in Civil Engineering	05/2017 - 05/2018	Nagoya University	Japan
Mark Lester F. Padilla	MS in Manufacturing Engineering	01/2018 - 06/2018	City University of Hong Kong	Hong Kong

2018 FOREIGN PHD GRADUATES

NAME	DEGREE CONFERRED	DURATION OF PROGRAM	TITLE OF THESIS/DISSERTATION	UNIVERSITY	COUNTRY
Jaymar B. Soriano	PhD in Information Science	04/2015 - 04/2018		Nara Institute of Science and Technology	Japan
Butch G. Bataller	PhD in Biological and Agricultural Engineering	08/2015 - 05/2018		Texas A&M University	USA
Jerico Z. Alcantara	PhD in Chemical Engineering	09/2015 - 04/2018	Succinic acid production from direct fermentation of lignocellulosic biomass using mixed fungal culture	Western Michigan University	USA

2018 RECIPIENTS OF FOREIGN RESEARCH DISSEMINATION GRANT

NAME	DURATION	RESEARCH TITLE/POSTER PRESENTATION PAPER	CONFERENCE/JOURNAL	VENUE	APPROVED BUDGET
Lessandro Estelito O. Garciano	January 4-6	Determining Best Practices for the Sustainability of the Small Scale Gold Production in the Philippines	International Academic Forum: International Conference on Sustainability, Energy & the Environment - Hawaii 2018	Hawaii	P150,000.00
Candy C. Mercado	January 4-6	The Role of Government Policies in Ensuring Sustainability in Small Scale Mining in the Philippines	International Academic Forum: International Conference on Sustainability, Energy & the Environment - Hawaii 2018	Hawaii	P150,000.00
Maria Lourdes P. Dalida	February 5-8	Transactive Energy Infrastructure for Quezon City, Philippines	4th IEEE World Forum on Internet of Things	Singapore	P120,000.00
Lawrence Y. Materum	March 14-16	Damper Glove for Hand Tremor	IAENG International Conference on Control and Automation	Hong Kong	P117,887.40
Louis Angelo M. Danao	March 19-21	Classification of Bird Sounds using Codebook Features	10th Asian Conference on Intelligent Information and Database Systems 2018	Vietnam	P73,017.26
Nicolette Ann A. Arriola	March 27-29	Characterization and modelling of the degredation of hydroxypropyl cellulose-blended sodium alginate microcapsules	5th Annual Conference on Engineering and Information Technology (2018 ACEAIT)	Japan	P110,552.91
Joanna Z. Resurreccion	March 27-29	Bioethanol Production via Consolidated BioProcessing of Alkali-Pretreated Rice Straw under Solid-State Conditions using Fusarium moniliforme	5th Annual Conference on Engineering and Information Technology (2018 ACEAIT)	Japan	P105,183.31
Oscar Victor M. Antonio Jr.	April 8-10	Ultrasonic Evaluation of High-Early Strength Concrete Subjected to Isothermal Curing	3rd World Congress in Civil, Structural and Environmental Engineering (CSEE Congress 2018)	Hungary	P150,000.00
Jay Robert del Rosario	April 19-24	Development of a 3D-Printed Biped Robot with Distributed Joint Control	2018 4th International Conference on Control, Automation and Robotics (ICCAR 2018)	New Zealand	P150,000.00
Kristian July R. Yap	May 21-23	Estimating WEEE Generation using Neural Networks and Adaptive Neuro-Fuzzy Inference System: A Quantitative Comparison	Sustainable Urban Mining 2018 - 4th Symposium on Urban Mining and Circular Economy	Italy	P119,337.31
Rinlee Butch M. Cervera	May 21-25	Fast Disparity Estimation using Dense Networks	2018 International Conference on Robotics and Automation (ICRA 2018)	Australia	P128,562.47

Annex E

Prospero C. Naval Jr.	June 3-7	Building Construction Progress Monitoring using Unmanned Aerial System (UAS),Low-cost Photogrammetry, and Geographic Information System (GIS)	ISPRS TC II Symposium 2018	Italy	P150,000.00
Manuel C. Ramos Jr.	June 3-8	Hydrodynamic Investigation of Laguna Lake, Philippines for Water Security and Flood Risk Management of Metro Manila	Asia Oceania Geosciences Society 15th Annual Meeting	Hawaii	P150,000.00
Marc D. Rosales	June 11-13	Anodization of Zirconia Nanotubes for Lead (II) Adsorption	2018 International Conference on Advanced Manufacturing and Materials	Japan	P114,792.86
Rowel O. Atienza	June 12-15	Wind Power Generator Model Based on LS-SVM for Unbalanced Three-Phase Distribution System Power Flow Studies	IEEE International Conference on Environment and Electrical Engineering (EEEIC) 2018	Italy	P150,000.00
Terence P. Tumolva	June 12-15	The Use of Satellite Altimetry and Tide Gauge Data in Local Vertical Datum Unification	11th Coastal Altimetry Workshop	Italy	P150,000.00
Terence P. Tumolva	June 24-28	Drive Cycle Performance and Emissions of CME-Diesel Blends	ASME 2018 Power and Energy Conference	Florida, USA	P150,000.00
Alexander Abad	June 25-29	Moisture Diffusion in Silica/Clay/Natural Rubber Hybrid Composites	14th International Conference on Diffusion in Solids and Liquids (DSL2018)	Netherlands	P150,000.00
Magdaleno R. Vasquez Jr.	June 25-29	Kinetics, Isoterm Studies, and Uptake Mechanisms of Anionic and Cationic Heavy Metal Adsorption onto Polymer-based Graphene Oxide Nanocomposite Beads	Ninth International Conference on Environmental Science and Technology (IC EST 2018)	Texas, USA	P150,000.00
Argel A. Bandala	July 4-6	VREX: A Framework for Immersive Virtual Reality Experiences	2018 IEEE Region 10 Symposium (TENSYMP 2018)	Australia	P150,000.00
Neil Irwin M. Bernardo	July 4-6	The Influence of Unsteady Flow to the Performance of a Horizontal Axis Tidal Turbine	2018 World Congress on Engineering - International Conference of Mechanical Engineering (WCE 2018 - ICME)	United Kingdom	P150,000.00

Rhandley D. Cajote	July 4-6	VAWT Cluster Parameter Study on Overall Cluster Performance, Part II: Oblique Angles and Direction of Rotation	2018 World Congress on Engineering - International Conference of Mechanical Engineering (WCE 2018 - ICME)	United Kingdom	P150,000.00
Carl Michael F. Odulio	July 4-6	Development of a Design Tool for a Two-Degree of Freedom Gear Train with Sun-Planet-Planet-Sun Configuration	2018 World Congress on Engineering - International Conference of Mechanical Engineering (WCE 2018 - ICME)	United Kingdom	P150,000.00
Prospero C. Naval, Jr.	July 4-6	Asynchronous MOUSETRAP Implementation of AES-128 Encryption using 65nm Standard Cells	IEEE Region 10 Symposium (TENSYMP) 2018	Australia	P141,133.99
Lew Andrew R. Tria	July 4-6	A Consolidated Economic Analysis of Alternative Fuel for Public Utility Jeepneys	2018 World Congress on Engineering - International Conference of Mechanical Engineering (WCE 2018 - ICME)	United Kingdom	P150,000.00
Terence P. Tumolva	July 4-6	Development of an Adaptive Pipe Inspection Robot with Rust Detection	IEE Region 10 Symposium	Australia	P71,029.20
Jose Gabriel E. Mercado	July 8-13	AC2: A Policy Gradient Actor with Primary and Secondary Critics	International Joint Conference on Neural Networks (IJCNN 2018)	Brazil	P150,000.00
Virginia J. Soriano	July 10-12	Design and Performance of an Immobilized Photocatalytic Reactor for Water Treatment	2018 Global Conference on Engineering and Applied Science (GCEAS)	Japan	P119,580.95
Dr. Jonathan Dungca	July 17-19	Multi-Object Tracking in a Multi-Vision Environment: A Road Surveillance System	5th International Conference on Communication and Computer Engineering	Malaysia	P57,428.01
Augustus C. Resurreccion	July 17-19	Obtaining Multipath Cluster Count in Semi-urban Wireless MIMO Systems at 2.7 HGz by Propagation Parameter Inclusion in Validity Indices	5th International Conference on Communication an Computer Engineering	Malaysia	P68,214.46
Neil Irwin M. Bernardo	July 18-20	Improving Error Resiliency of Sparse Code Multiple Access using Precoding and Non-orthogonal Signaling Techniques	11th IEEE/IET International Symposium on Communication Systems, Networks, and Digital Signal Processing	Hungary	P149,633.19

Manuel C. Ramos Jr.	July 22-27	Facile Fabrication of a Solid Oxide Electrolysis Cell via Drop-Coating Method	12th International Conference on Ceramic Materials and Components for Energy and Environmental Applications (CMCEE 2018)	Singapore	P120,000.00
Chris Vincent J. Densing	August 5-8	Person-Following Robotic Suitcase	IEEE 61st International Midwest Symposium on Circuits & Systems	Canada	P150,000.00
Maria Theresa G. De Leon	August 20-23	Computational Validation of the Degradation of Radiation Grafted Anion Exchange Membrane via Removal of Vinylbenzyl Trimethylammonium Hydroxide	Materials Challenges in Alternative Renewable Energy Conference (MCARE 2018)	Canada	P150,000.00
Nestor Michael C. Tiglao	August 25-29	Optimal Multi-Criteria Selection of Hybrid Energy Systems for Off-Grid Electrification	21st Conference on Process Integration for Energy Saving and Pollution Reduction (PRES 2018)	Czech Republic	P148,304.61
Joey D. Ocon	August 26-31	Characterization of Microplastics in Metro Manila Rivers	World Water Week 2018	Sweden	P150,000.00
Ryan Rhay Vicerra	August 29-30	Archery Target Detection Through Color Classification and Sequence Recognition Implemented on a FPGA	5th International Conference on Computational Science and Technology	Malaysia	P20,000.19
Anastacia B. Alvarez	September 15-21	Stability of Philippine Nickel Laterite Ore in Aqueous Suspension: Basis for Process Development and Treatment; and Electrochemical Oxidation and Dissolution of Refractory Benguet (Philippines) Gold Concentrate in Hypochlorite Solutions	International Mineral Processing Congress (IMPC2018)	Russia	P150,000.00
Richard DV. Espiritu	September 16-21	The Household Water Consumption of Different Socioeconomic Classes in Selected Communities in Metro Manila, Philippines	IWA (International Water Association) World Water Congress and Exhibition 2018	Japan	P120,000.00
Florencio C. Ballesteros, Jr.	September 20-22	Comparison of Supervised Algorithms on Diwata-1 Microsatellite Space Bourne Multispectral Imager	2018 IEEE International Conference for Aerospace Electronics and Remote Sensing Technology (ICARES)	Indonesia	P27,004.50

Rizalinda L. De Leon	September 20-22	Diwata-1 Target Pointing Error Assessment using Orbit and Space Environment Prediction Model	2018 IEEE International Conference for Aerospace Electronics and Remote Sensing Technology (ICARES)	Indonesia	P96,010.89
Jem Valerie D. Perez	September 24-28	Life cycle energy use and CO2 emissions of small scale gold mining and combined processing in Camarines Norte Philippines; Life Cycle analysis of PVC pipes and fittings in the Philippines	LCA Conference XVIII	Colorado, USA	P150,000.00
Maria Antonia N. Tanchuling	September 27-28	Assessment of Nutrient Contamination Level for the Improvement of Water Quality in Estero De San Miguel using Philippine and Japan made Granulated Coal Ash	11th AUN/SEED-Net Regional Conference in Environmental Engineering	Cambodia	P43,952.50
Rowel O. Atienza	October 10-11	Assessment of Mangrove Damage and Recovery using ALOS-2 PALSAR-2 Data	5th International Conference on GeoInformation Science: GeoAdvances 2018	Morocco	P102,268.08
Binoe E. Abuan	October 26-29	Exposure-Dependent Antimicrobial Activity and Oxidative Properties of Polymer-Based Graphene Oxide Nanocomposites	3rd International Conference on Materials Technology and Applications (ICMTA 2018)	Japan	P120,000.00
Ralph S. Jose	October 26-29	Developing a Physically Cross-Linked Hydroxyethyl Cellulose Hydrogel for Wound Dressing Applications	2018 3rd International Conference on Materials Technology and Applications (ICMTA 2018)	Japan	P120,000.00
Mary Donnabelle L. Balela	October 28-31	A Dimmable Open-Loop Resonant LED Driver for a Horticulture Grow Light; Constant Current Frequency Tracking in LCC Converters	IEEE TENCON 2018	South Korea	P120,000.00
Ariel C. Blanco	October 28-31	Data Center Heat Distibution Modeling Using Onboard Sensors	IEEE TENCON 2018	South Korea	P120,000.00
Russel John C. Gallano	October 28-31	Descriptor Extraction and Distance Metric Learning for a Robust Person Re-Identification System	IEEE TENCON 2018	South Korea	P120,000.00

Eugene C. Herrera	October 28-31	Design and Implementation of a Wideband RF Front-end Add-on Module for Improving Spectrum Measurements in TV and Cellular Frequency Bands	IEEE TENCON 2018	South Korea	P120,000.00
Bryan B. Pajarito	October 28-31	A 0.5V Low-Power All-Digital Phase-Locked Loop in 65Nm CMOS Process for Wireless Sensing Applications; A Study on Coarse Stage Bit Allocation to Improve Power Efficiency of a 10-Bit Coarse-Fine SAR ADC Implemented in 65nm CMOS Process for Environmental Sensing Applications; A gm/ID Based Algorithm for the Design of CMOS Miller Operational Amplifiers in 65nm Technology; and A Study on the Effectiveness of Using a Hybrid Topology in Improving the Power Efficiency and Voltage Regulation over a Wie Input Range of DC-DC Converters	IEEE TENCON 2018	South Korea	P75,895.40
Jem Valerie D. Perez	October 28-31	An Ultra-Low Power Direct Active-RF Detection Wake-up Receiver with Noise-Cancelling Envelope Detector in 65nm CMOS Process; A 2.4 GHz Energy-Efficient Short-range Receiver with Wake-up and Multiple Gain Settings for Wireless Sensor Networks; Design and Implementation of a Thermoelectric Energy Harvesting Interface Circuit with Maximum Power Point Tracking and Self-Startup Capability for Wireless Sensor Nodes; and Design of Multiple Prediction Complexity Configurations for an FPGA-Based H.264 Baseline Profile Encoder	IEEE TENCON 2018	South Korea	P75,895.40
Edwin N. Quiros	October 28-31	Hardware-Based Model of Node Clustering Using Q-Learning for Wireless Sensor Networks	IEEE TENCON 2018	South Korea	P120,000.00
Manuel C. Ramos Jr.	October 28-31	Low Power Converter for Capacitive Sensors using Capacitance-to-Pulse Width Modulation	IEEE TENCON 2018	South Korea	P120,000.00
Rosalie B. Reyes	October 28-31	Differential Power Processing for Submodule Solar Photovoltaic Systems	IEEE TENCON 2018	South Korea	P120,000.00

Rosalie B. Reyes	October 28-31	Differential Power Processing for Submodule Solar Photovoltaic Systems	IEEE TENCON 2018	South Korea	P120,000.00
Richard de Jesus	November 12-14	Assessment of Strength Parameters of Unreinforced Masonry (URM) Blocks in Heritage Structures in the Philippines	4th International Conference on Science, Engineering & Environment	Japan	P32,100.00
Herman D. Mendoza	November 25-30	Electromechanical Properties of Flexible Piezoelectric Nanogenerator (PENG) using Different Patters of Vertically-aligned BaTiO3 Nanotubes	2018 Materials Research Society Fall Meeting	Massachusetts, USA	P150,000.00
Ariel C. Blanco	December 2-6	Decision and Risk Modeling for Implementing Regional Environmental Protection Policies on Interdependent Economic and Infrastructure Systems	Society for Risk Analysis 2018 Annual Meeting	Louisiana, USA	P150,000.00
John Richard E. Hizon	December 2-6	Diamond-like Carbon Thin Film Deposition using Low-Energy Ion Beams	Pacific Rim Symposium on Surfaces, Coatings and Interfaces (PACSURF 2018)	Hawaii	P150,000.00
Erickson L. Llaguno	December 10-12	Low-cost Fabrication of a Polydimethylsiloxane (PDMS) Microreactor Using an Improved Print-and-Peel (PAP) Method and Its Performance Testing in Silver Nanoparticle Synthesis	2nd International Conference on Nanomaterials and Biomaterials (ICNB 2018)	Spain	P150,000.00
Alvin Chua		Development of Low-Cost Micro-controller based Dual-axis Solar Tracker using Image Processing	5th International Conference on Communication and Computer Engineering		P27,255.82
Roberto S. Soriano		Characterization analysis and optimization of water-based printing ink formulations for polyethylene films	Applied Adhesion Science (ISSN: 2196-4351, 0.186 SCImago Journal Rank)		P46,000.00
Mili-Ann M. Tamayao		Deep Foundation Reference for Metro Manila, Philippines; Mat Foundation Design Reference for Metro Manila, Philippines; A Comparative Settlement Prediction of Limestone Blended Materials using Asaoka and Hyperbolic Model Parameters of Philippine Coal Ash; and LInear Optimization of Soil Mixes in the Design of Vertical Cut-Off Walls	International Journal of GEOMATE		P105,200.00

Nestor Michael C. Tiglao		Optimization Preparation of Rice Husk (RHA) as a Supplementary Cementitious Material; Microstructure and Mechanical Properties of Concrete with Treated Recycled Concrete Aggregates	International Journal of GEOMATE		P51,840.00
Mark Edwin A. Tupas		RT-CaCC: A Reliable Transport with Cache-Aware Congestion Control Protocol in Wireless Sensor Networks	IEEE Transactions on Wireless Communications		P57,350.70
		Paper 1: RF Plasma Cleaning of Silicon Substrates with High-Density Polyethylene Contamination Paper 2: Effects of RF Plasma Treatment on Spray Pyrolized Copper Oxide Films on Silicon Substrates Paper 3: Mechanical Properties of Epoxy Composites with Plasma-Modified Rice-Husk-Derived Nanosilica Paper 4: Properties of Spray-Deposited Liquid-Phase Exfoliated Graphene Films	57th Volume of the Japanese Journal of Applied Physics		P72,270.00
Magdaleno R. Vasquez Jr.		Identification of River Hydromorphological Features using Histograms of Oriented Gradients with Support Vector Machine Classifier Cascaded to the Viola-Jones Algorithm on a Quadcopter	International Journal of Mechanical Engineering and Robotics Research		P16,505.10

LIST OF CURRENT AND ONGOING R&D PROGRAMS/PROJECTS

R&D Program/Project	Program/Project Leader	Duration		Fund Source	Funding Program/Division	Fund (Php)	Status
		Start	End				
CHEMICAL ENGINEERING							
Sustainable Use of Waste Chicken Feather for Replacement of Wood Fibers in the Production of Cement Bonded Composites	Dr. Bryan Pajarito	06/2018	05/2019	DOST		6,434,555.00	Ongoing
COMPUTER SCIENCE							
Tick Tock Tech Talk	Mario Carreon	03/2017	03/2018	DOST	PCIEERD	4,986,031.96	Completed
FishEYE: Field and Market Testing of a Cost Effective	Dr. Prospero Naval Jr.	03/2017	09/2018	DOST	TAPI	7,150,358.00	Completed
DILAW: Detection and Identification of Legitimate Public Utility Vehicles Along Various Road Networks	Wilson Tan	02/2016	02/2018	DOST	PCIEERD	4,098,102.00	Completed
Cyber Physical Transportation System (CPTS)	Dr. Adrian Roy Valdez	08/2017	03/2019	DOST	PCIEERD	19,503,603.00	Ongoing
OVPAA-EIDR: Integrative Genomics Analysis Workbench for Rice Science	Dr. Jan Michael Yap	01/2017	03/2018	DOST	PCAARD	540,993.00	Completed
ELECTRICAL AND ELECTRONICS ENGINEERING							
Smart Plant Production in Controlled Environments (SPICE)	Nicolette Arriola	01/2018	12/2018	DOST	PCIEERD	33,136,071.00	Completed
AIRSCAN: Collaborative Aerial Robotics in Large-Scale Urban Infrastructure Management	Rowel Atienza	05/2017	04/2019	CHED	PCARI	85,000,000.00	Ongoing
Smart Plant Production in Controlled Environments (SPICE) Program Project 1: Standalone Urban Farm	Chekov Castillo	11/2017	11/2020	DOST	PCIEERD	33,243,770.24	Ongoing
Space Science and Technology Proliferation in an Inter-University Network (STeP-IN)	Paul Jason Co	08/2018	07/2022	DOST		138,000,000.00	Ongoing
Smart Plant Production in Controlled Environments (SPICE) Program Project 1: Standalone Urban Farm	Dr. John Richard Hizon	01/2018	11/2020	DOST	PCIEERD	33,243,770.24	Ongoing
Cyber-Physical Transportation System	Manuel Ramos Jr.	10/2017	09/2018	DOST	PCIEERD	19,463,602.00	Completed
Smart Plant Production in Controlled Environments (SPICE)	Manuel Ramos Jr.	01/2018	12/2018	DOST	PCIEERD	33,136,071.00	Completed
Smart Plant Production in Controlled Environments (SPICE) Program Project 2: Sensor-based monitoring and analytics for Smart Hydroponics	Marc Rosales	01/2018	11/2020	DOST	PCIEERD	108,290,299.10	Ongoing
GEODETIC ENGINEERING							
Tidal Current Energy Integrated Resource Assessment and Spatial Planning Tool	Asst. Prof. Ma. Rosario Concepcion Ang	04/2014	04/2018	DOST	PCIEERD	27,545,348.00	Completed
MECO TECO: Multi-Platform and Cross-Sensor Water Quality Monitoring	Dr. Ariel Blanco	01/2018		DOST	PCIEERD	7,613,068.00	Ongoing

IAMBlueCECAM Program Project 1 - Mangrove Remote Sensing Using LiDAR, Multispectral, and Hyperspectral Data (MaRS)		10/2017	10/2018	DOST	PCIEERD	5,175,172.48	Completed
AMBlueCECAM Program Project 10- Geospatial Decision Support Systems and Capacity Building on Geomatics for Mangrove Seagrass Conservation (CapGeoDSS)		10/2017	10/2018	DOST	PCIEERD	7,915,605.00	Completed
IAMBlueCECAM Program Project 3- Geosimulatio of Magroves and Seagrass Vegetation Dynamics (GeoSIMAS)	Asst. Prof. Edgardo Macatulad	10/2017	10/2018	DOST	PCIEERD	4,172,837.00	Completed
Training on Lidar Applications on Disaster Risk and Natural Resources Management for Cambodia	Dr. Enrico Paringit	2018		DOST	PCIEERD	2,618,760.00	Ongoing
DOST-Phil-LiDAR 1 Program and DILG-GIS and Flood Disaster Management for Local Government Units		2018		DOST	PCIEERD	13,247,271.00	Ongoing
Modernization of the Philippines Geodetic Reference System	Dr. Rosalie Reyes	12/2017	12/2018	NAMRIA		1,900,000.00	Completed
IAMBlueCECAM Program Project 2-LiDAR, Hyperspectral, and Sonar Remote Sensing of Seagrass Meadows (SeaRS)	Asst. Prof. Ayin Tamondong	10/2017	10/2018	DOST	PCIEERD	6,325,900.00	Completed
IAMBlueCECAM Program Project 9- WebGIS for Mapping, Supporting Decision Making, and Promoting Ecological Services of Blue Carbon Ecosytems (BlueWebMaps)	Prof. Mark Edwin Tupas	10/2017	10/2018	DOST	PCIEERD	4,814,801.00	Completed
CIVIL ENGINEERING							
Development of a Customized Local Traffic Simulator (Phase 2)	Hilario Sean Palmiano	04/2018	09/2019	DOST	PCIEERD	4,992,723.20	Completed
Cyber Physical Transportation System (CPTS)		10/2017	09/2018	DOST	PCIEERD	19,503,602.00	Completed
Engineering the Jeepney Using an OEM Vehicle Platform	Dr. Karl Vergel	04/2018	09/2018	DOST	PCIEERD	4,998,472.00	Completed
INDUSTRIAL ENGINEERING							
Study on Innovative Strategies to Increase the Productivity in the Department of Science And Technology (DOST) Central Office (CO)	Lowell Lorenzo	01/2018	09/2018	DOST		965,000.00	Completed

MECHANICAL ENGINEERING							
Engineering the Jeepney Using an OEM Vehicle Platform	Dr. Edwin Quiros	01/2017	12/2018	DOST	PCIEERD	4,999,750.00	Completed
MINING, METALLURGICAL AND MATERIALS ENGINEERING							
Up-scaled Solution Phase Synthesis of Metal Nanowires and their Application in Transparen Metal Nanowire Touch Panel	Dr. Mary Donnabelle Balela	05/2017	05/2018	DOST	PCIEERD	12,756,724.00	Completed
Photoelectrochemical activity of low temperature anodized titania (TiO2) nanotubes	Dr. Candy Mercado	02/2017	02/2018	DOST	ADMATEL-EPDC	249,984.00	Completed
Development of Radio Frequency (RF) Plasma System for Ti-Al-N Thin Film Synthesis	Dr. Magdaleno Vasquez Jr.	04/2017	03/2019	DOST	PCIEERD	2,499,662.00	Ongoing
Synthesis and Modeling of Porous Activated Graphene Nanofilters for Precise Water Purification and Desalination		04/2017	04/2019	CHED	PICARI	69,166,694.60	Ongoing
Development of Low-Energy Ion Source System for the Synthesis of Diamond-like Carbon Films		02/2017	07/2018	DOST	GIA	10,674,323.40	Completed

LIST OF VISITING PROFESSORS AND RESEARCHERS

NAME OF VP/VR	HOME INSTITUTION	HOST UNIVERSITY	FIELD OF STUDY	COVERED DATES
Dr. Raouf Naguib	Liverpool Hope University	DLSU	Biomedical Engineering	February 22 - March 24
Dr. Jaclyn Lorraine Ocumpaugh	University of Pennsylvania	ADMU	Educational Data Mining	May 26 - June 3
Dr. Eryk Dutkiewicz	University of Technology (Sydney)	MSU-IIT	Mechanical Engineering	August 30 - September 5
Prof. Khanjan Mehta	Lehigh University	UPD	Social Innovation	July 1-8
Prof. Chi Fang Huang	Tatung University	MSU-IIT	Electrical Engineering	August 30 - September 5
Prof. Sekishita Nobumasa	Toyohashi University of Technology	USC	Fluid Mechanics	August 31 - September 29
Dr. Po-Ya Abel Chuang	University of California (Merced)	CLSU	Fuel Cell Technologies and Solar Power	September 3-9
Dr. Mikio Umeda	Kyoto University	UPLB	Robotics	September 24 - October 5
Prof. Gabriel Strykowski	Denmark Technical University	UPD	Geodesy, Gravimetry and Geophysics	October 14-20
Prof. Rene Forsberg	Denmark Technical University	UPD	Geodesy, Gravimetry and Geophysics	November 12-18
Dr. Ming-Lang Tseng	Asia University	DLSU	Sustainable Supply Chain Management	December 12-13