

Applicant: **Almeerah Naila Lawas (37623964)**

Program: M.Sc. in Genome Science and Technology (VGMMSC-LE)

Entry period: September 2024

Application comments:

No comments available

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Application form
Resume
Statement of Interest/Intent
Transcripts & Diplomas – Unofficial
eReference (eRef) Responses
Reference Letter

LAWAS, ALMEERAH NAILA ()

37623964

Degree Selection

Submission Date: 01/Dec/2023

Campus	Program (VGMMSC-LE)	Academic Year	Term	Term Start
Vancouver	M.Sc. in Genome Science and Technology	2024-2025	W1	Sep 2024

Source of Interest

How did you find out about UBC?
Family

Personal and Contact Details

Student Number		Family Name (Surname)		Preferred Name
37623964		LAWAS		
Title	Given Name	Middle Name	Former Family Name (Surname)	
MS	ALMEERAH NAILA			

Date of Birth	Gender	Country of Birth	Country of Current Citizenship
31/Dec/1999	Female	Philippines	Philippines
Dual Citizenship	Primary Spoken Language	Other Spoken Language	Visa Type
	English		International Student

Address Line (1 & 2)			
3209 NATIONAL HIGHWAY RD. ANOS LOS BANOS LAGUNA			
City	Province, State or Region	Postal or Zip Code	Country
LOS BANOS		4030	Philippines

Day Telephone Number	Evening Telephone Number	Email Address
639612112152		almeerah.lawas@gmail.com

Do you identify yourself as an Aboriginal person of Canada?
Do you identify yourself as a Racialized person?
Yes

Academic History

- Applicant indicates that they have only attended post-secondary institution(s) other than UBC.

University of the Philippines - Manila

Institution Country:	Philippines
Start Date:	01/Aug/2018
End Date (or Expected End):	01/Dec/2022
Program of Study:	Biochemistry
Credential Status	Conferred / Complete
Date Conferred:	01/Aug/2023
Credential Received:	Bachelor degree
Awards & Honours received with this degree:	Cum Laude, Department of Science and Technology Scholarship
Required to withdraw:	No
Self Reported GPA:	
Used for Basis of Admission to UBC:	

- No **UBC** academic history found for this student number (37623964)

Self-Reported Test Scores

TOEFL

Registration #	Test Date	Test Format
3271611227273453	19/Nov/2022	Internet
Total Score	93	
Listening	26	
Structure/Writing	21	
Reading	22	
Speaking	24	
MyBest Total		
MyBest Listening		
MyBest Writing		
MyBest Reading		
MyBest Reading		

Funding

Standard Questions

Primary Funding

SOURCE of the support	
DOLLAR amount	
Includes TUITION fees?	
WHEN the support will commence	
WHEN the support will end	

Please indicate the SOURCE(S) of any awards, scholarships, sponsorships or fellowships for which you have applied or will apply.	PEO International Peace Scholarship
Please indicate the Canadian Dollar amount PER YEAR of support applied for.	\$12500
Please indicate the NUMBER OF YEARS of study this support would cover.	2
If you do not receive this financial support, will you be able to attend.	Unlikely
How do you plan to fund your studies?	

Experience & Interests

Standard Questions

Areas of Interest

Faculty Members

Mayor, Thibault
Dennis, Jessica
Eltis, Lindsay D

Please provide a brief statement of your academic and/or professional goals and how these align with this graduate program.

Please describe any research and/or work experience (including publications, etc.) you've undertaken that is relevant to your proposed field of study.

My efforts in research have always stemmed from the principle of prevention or early disease intervention. Before entering my university, I took a special interest in the fields of biotechnology and genetics, where I conducted a research study on bioadsorption that led me to the UP Genetic Researchers and Agricultural Innovators Society Research Conference. During the event, I saw the diverse applications of genetic research in the medical field, including that for genetic therapy, which really caught my interest.

Lectures on epigenetics at the university by Dr. Maria Constancia Carrillo fostered my early curiosity for medical research. In particular, I took an interest in epigenetics for diseases that affect the brain function, such as Alzheimer's disease. The slow yet sudden manifestation of Alzheimer's disease makes it difficult to foresee and its repercussions even more difficult to address. On a personal level, my interest in the study of neurodegenerative diseases rooted from seeing its repercussions firsthand in my grandmother. Relevant to gene therapy, I then took courses such as Physical Biochemistry, which was foundational to knowing key factors related to disease progression in Alzheimer's disease including DNA methylation and ubiquitin signaling. Exposure to progress carried out in the field of neuroscience and neurogenetics made me want to immerse myself more in that area of research.

However, in the Philippines, opportunities to conduct research in genetics and neuroscience are scarce. With limited resources and funding, research is heavily centered on tropical medicine and agriculture, owing to the country's geographical advantage. Knowing this, I first directed my research efforts to learning about biotherapeutics for medical research. At the University, I took an elective on Medicinal Chemistry under Prof. Jeremiah Cleofas, learning more about biotherapeutics and drug development processes. Continuing with this pursuit, I reached out to Dr. Florendo Flores of the University of the Philippines Los Baños, whose specialty includes the development of biocompatible drug delivery for vitamin systems.

Studying disease mechanisms requires comprehension of different levels of molecular expression, including that of the genome, transcriptome, proteome, and the higher metabolome level. At the Protein, Proteomics, and Metabolomics Facility, research efforts are dedicated to the application of omics technology at the proteome and metabolome levels, utilizing the latest technologies in High-Resolution Mass Spectrometry Analysis.

Upon entering the facility, I joined a collaborative research project with the University of the Philippines - National Institutes of Health for Tuberculosis (TB) metabolomics. With its focus on children with TB, the ongoing study aims to profile biomarkers that suggest the early onset of TB disease using liquid chromatography-mass spectrometry (LC-MS) and nuclear magnetic resonance (NMR) data. Our facility houses the highest-resolution mass spectrometry analyzer in the country, the Orbitrap Fusion™ Tribrid™ mass spectrometry. For the project, I am involved in the LC-MS method development, UHPLC Orbitrap system handling and troubleshooting, and data analysis using Compound Discoverer and MetaboAnalyst. Furthermore, the research integrates bioinformatics techniques with R to enhance our data preprocessing. Moreover, I am the lead analyst for Nuclear Magnetic Resonance (1H NMR PRESAT) data analysis using the MestReNova software. This characterization technique is added to validate the LC-MS results for the presence of metabolites and metabolic pathways that could affect disease onset in Tuberculosis. Knowing there are differences between the genetic makeup of Asian and Western populations, I am interested in efforts to bridge this gap in disease therapy, with the end goal of inclusive and personalized treatment.

Program-Specific Questions

Briefly discuss your background in life sciences, including academic, work or other experiences that may assist the

My responsibilities at work include performing protein services from extraction to characterization. I assist university

<p>admissions committee. Please limit your response to one page.</p>	<p>and graduate students on the use of ÄKTA Fast Protein Liquid Chromatography for the purification of their protein samples. With omics as an emerging discipline for medical research, the Protein, Proteomics, and Metabolomics Facility partnered with 10 medical schools across the country to strengthen their capacity for research in proteomics, with cancer cell lines as our experimental model. As part of the training team, I have been actively testing and improving our experimental protocol in SDS-PAGE, Western Blot, and Enzyme-Linked Immunosorbent Assay. Relating to the life sciences, I took fundamental and advanced courses such as Techniques in Biochemistry and Molecular Biology, Environmental Biochemistry, Microbiology, Physical Biochemistry, Bioethics, Organic Chemistry, and Analytical Chemistry.</p>
<p>Briefly discuss your background in quantitative sciences (math, statistics, computer science, engineering, physics) including academic, work or other experiences that may assist the admissions committee. Please limit your response to one page.</p>	<p>I pursued an internship in a precision medicine research lab, where I learned in-silico techniques used to study gastric cancer using the immunome or peptides from the proteome that interact with the immune system. Pascific Laboratories works on advancing research in precision medicine for cancer and other diseases that can be addressed through genetic therapy. For two months, my efforts were geared toward the analysis of exome sequencing, comparing datasets with potential candidate mutations. For patients of East Asian ancestry, the research was able to identify a link between alcohol metabolism and mutations of the RHOA gene, associated with malignancy. A strong facet of the Biochemistry curriculum at UP Manila is its highly quantitative approach to its chemistry and molecular biology courses. I took courses in Biochemical Engineering, Analytical Chemistry I/II/III, Physical Chemistry I/II/III , Advanced Calculus I/II/III, Physics I and II, Elementary Statistics.</p>

Referee 1

Name	Dr. Maria Constanca Carrillo
Job Title / Occupation	Professor and Dean
Institution / Company / Organization	UNIVERSITY OF THE PHILIPPINES MANILA
Type of Reference	Academic
Address	COLLEGE OF ARTS AND SCIENCES UNIVERSITY OF THE PHILIPPINES MANILA METRO MANILA Philippines 1000
Referee Email / Website	mtobrerocarrillo@up.edu.ph
Telephone #	
Notes to Referees	

Referee 2

Name	Mark Jeremiah Cleofas
Job Title / Occupation	Assistant Professor 1
Institution / Company / Organization	UNIVERSITY OF THE PHILIPPINES MANILA
Type of Reference	Academic
Address	CHEMISTRY UNIT, DEPARTMENT OF PHYSICAL SCIENCES AN UNIVERSITY OF THE PHILIPPINES - MANILAERMITA METRO MANILA Philippines 1000
Referee Email / Website	mbcleofas@up.edu.ph
Telephone #	
Notes to Referees	

Referee 3

Name	Dr. Neil Andrew D. Bascos
Job Title / Occupation	Officer-in-charge
Institution / Company / Organization	PHILIPPINE GENOME CENTER
Type of Reference	Professional
Address	PROTEIN, PROTEOMICS, AND METABOLOMICS FACILITY PHILIPPINE GENOME CENTERQUEZON CITY METRO MANILA Philippines 1101
Referee Email / Website	ndbascos@up.edu.ph
Telephone #	
Notes to Referees	

Almeerah Naila Lawas

Laguna, PH | 09612112152 | alawas@up.edu.ph

Education

University of the Philippines Manila, BS Biochemistry **2023**

Cum Laude – GWA 1.516 / 1.00

Recipient of Department of Science and Technology - Science Education Institute Merit Scholarship

Philippine Science High School Main Campus, K-12 Graduate Diploma **2018**

High Honors – GWA 1.4039 / 1.00

Awarded for Excellence in Chemistry

Recipient of Department of Science and Technology – Philippine Science High School Scholarship
(240 out of 20,000+ applicants accepted each year; a six-year full government scholarship for young Filipino students with an aptitude for science and technology)

Research Experience

Philippine Genome Center (PGC) | Junior Research Associate **07/2023 - Present**

- Handling and operation of Fast Protein Liquid Chromatography (FPLC), Sodium Dodecyl Sulfate - Polyacrylamide Gel Electrophoresis (SDS-PAGE) Amersham Imager, and Multiwavelength Spectrophotometer for protein and proteomics services for clients
- Organize and run workshops, webinars, and external protein trainings for the Protein, Proteomics, and Metabolomics Facility (PGC-PPMF)
- Manage client consultation schedules, prepare Service Quotations, Conformes, and Billing Invoices, and write service reports and Standard Operating Procedures (SOPs) for PPMF

Philippine Genome Center | Science Research Specialist I **02/2023 - 06/2023**

- Participated in the research project "*Urine metabolomic characterization among children with different Tuberculosis (TB) status*"
- Trained for the handling and operation of the Orbitrap Fusion™ Tribrid™ Ultra-High-Performance Liquid Chromatography for metabolomics
- Developed methods for Liquid Chromatography – Mass Spectrometry (LC-MS) and conducted data analysis (Compound Discoverer software)
- Performed supplementary data analysis on Nuclear Magnetic Resonance (NMR) spectral data (MestReNova software), and statistical analysis (MetaboAnalyst and R) for the project
- Obtained quotations and determined technical specifications for reagents, supplies and equipment that were procured for the project

Pascific Laboratories | Clinical research intern for precision medicine **02/2022 - 04/2022**

- Performed analysis for gastric cancer immunome with Whole Genome Sequencing/Whole Exome Sequencing (WGS/WES)
- Worked with Dr. Richie Soong (*National University of Singapore*) for clinical research writing and presentations

- Conducted gene validation techniques with experimental rice varieties
- Plant tissue culture for the development of rice varieties (*Oryza sativa* L. subsp. indica)

Research Projects

- Urine metabolomic characterization among children with different TB status | Philippine Genome Center - Protein, Proteomics, and Metabolomics Facility | Feb 2023 - ongoing
Tuberculosis biomarker profiling in Filipino children of different TB pathologic status using untargeted LC-MS metabolomics. Project aims to improve the diagnosis of TB among children to allow early provision of anti-TB therapy among those with previously undiagnosed active TB infection.
 - A collaborative project between PGC-PPMF and UP-NIH, funded by the U.S. National Institutes of Health - Civilian Research and Development Foundation (CRDF) Global
 - Manuscript in preparation
- Comparative characterization of *Annona muricata* L. (Guyabano) leaves extract microcapsules and decoction preparations | University of the Philippines Manila | 2020-2022
Formulation of Guyabano (local medicinal plant) microcapsules with maltodextrin coating. Project aims to enhance targeted oral delivery of capsules for pharmaceutical usage (Phase I).
 - SEM imaging, spray-drying, antioxidant activity
- Feasibility of calachuchi (*Plumeria rubra*) bark as a chelating agent for synthetic wastewater | Philippine Science High School | 2016-2018
Oral and poster presenter at the UP Genetic Researchers and Agricultural Innovators Society Research Conference in 2017.
Project aimed to mimic nature's absorbance practices to lessen the concentration of zinc, copper, and nickel in water for potential application in Manila rivers.
 - heavy metal chelation, atomic absorbance spectroscopy

Research Interests

- Mass Spectrometry for metabolomics profiling and biomarker research
- Epigenetics for precision medicine
- Neurogenetics and neurodegenerative diseases

Facilitated Trainings

- ÄKTA Fast Protein Liquid Chromatography and Surface Plasmon Resonance 4-day Workshop (*Onsite Workshop and Webinar*) | September 2023
- Metabolomics in Epidemiologic Studies of Chronic Diseases and Beyond by Dr. Temprosa of George Washington University (*PPMF Seminar*) | August 2023
- PEP Talk: Protein Extraction, Purification, and Characterization (*PPMF Seminar*) | July 2023
- Protein Training Workshop co-organizer and lecturer for SDS-PAGE (*Onsite Workshop*) | July 2023

Attended Trainings & Certificates

- ÄKTA Fast Protein Liquid Chromatography and Surface Plasmon Resonance
- Mastering Protein Analysis Techniques: Online Workshop on Enzyme-Linked Immunosorbent Assay (ELISA) and Western Blot Assays by the Biological Research Services Laboratory, Natural Sciences Research Institute (BRSL NSRI) | August 2023
- The Role of Mass Spectrometry in the "Omics Era" Seminar by Chulalongkorn University | August 2023

- Selection and Gene Expression in the Rice Genome Seminar by Korea International Cooperation Agency – University of the Philippines Los Banos – International Rice Research Institute (KOICA-UPLB-IRRI) | August 2023
- Basics of Intellectual Property by Department of Science and Technology Philippine Council of Health Research and Development (DOST-PCHRD) | June 2023
- Good Clinical Practice by National Institute on Drug Abuse (NIDA) Clinical Trials Network | February 2023
- Working with AI in the Health Sciences - Innovations in Health Lecture Series by UP Surgical Innovation and Biotechnology Laboratory | January 2023
- Real-Time Quantitative PCR Techniques (RT-qPCR) Seminar by Bio-Rad Laboratories | June 2022
- Philippine-California Advanced Research Institutes (PCARI) Towards One Health x Masterclass | October 2021
- Animal Care and Use Training (Phase I) by UPM Institutional Animal Care and Use Committee | April 2022
- Research and Ethics Training by the University of the Philippines (UP) Manila Ethics Board | December 2021

Affiliations & Volunteer Experience

- UP Biochemistry Society and Philippine Association of Chemistry Students | 2018 - Current
 - Spreading awareness about Biochemistry as a field, hosting science journalism workshops, seminars & competitions for incoming college students
 - Publications member: branding, social media presence
 - Externals member: contacting sponsors, schools
- Philippine Society of Youth Science Clubs | 2018 - 2020
 - Showcased the marvels of science and nature by arranging nationwide events; a balance of fun, innovation, and challenge to inspire elementary and high school students to pursue STEM education in the future
 - Led the Math, Science, and Kalikasan Workshops team to organize nationwide science events
 - Managed 600+ participants (5-person teams) in Region XI SUMMIT-MSKA Event

Languages

- English (bilingual)
- Filipino (bilingual)
- Korean (intermediate level)
- Spanish (basic level)

Re: Statement of Intent**University of British Columbia, Master of Science in Genome Science & Technology**

Biomarkers are biological indicators that can signal the presence of a disease before its symptoms manifest. Identifying the precise onset of a disease has been a pressing challenge to both clinicians and researchers alike, yet a multitude of benefits can result from its early intervention and prevention. Biomarkers can be examined at different levels, from the genome to the metabolome and the higher systemic level. My current research in untargeted biomarker discovery for Tuberculosis allows me to approach disease profiling at the metabolome level, identifying metabolites that are upregulated or downregulated, and mapping possible pathways that are affected during disease progression. Together with my interest in neurogenetics, I wish to pursue graduate studies at the University of British Columbia (UBC) to explore how the growing platform of ‘omics’ research could aid in the search for biomarkers in neurodegenerative diseases such as Alzheimer’s disease. I am curious about epigenetics and how diseases stem from a combination of both genetic and environmental factors. I am particularly interested in examining risk and resilience factors of Alzheimer’s disease based on affected regulation pathways during protein homeostasis, which is a strong area of research at UBC.

In 2012, I was admitted to the Philippine Science High School (PSHS), the country’s premier institution dedicated to cultivating the next generation of young Filipino researchers and leaders in STEM. Granting a full scholarship to only 240 Filipino students nationwide, I became a recipient of the award from the Department of Science and Technology (DOST). In those six years (K-12 curriculum), I developed an interest in biotechnology and genetics, which brought me to the International Rice Research Institute in 2016 as a student intern. For two months, I trained under Dr. Sung-Ryul Kim, where I was introduced to bioengineering practices for designing climate-resistant rice variants. In 2017, I attended the University of the Philippines Genetic Researchers and Agricultural Innovators Society Research Conference with my team as oral and poster presenters for conducting research in applied biotechnology. This experience taught me that every little effort in research is cumulative and holds significance within a community of researchers sharing similar disciplines. Being exposed to different fields of science at an early age helped me recognize my passion for medical research.

My fascination with the field of genetics and biotherapeutics led me to pursue a degree in Biochemistry. At the University of the Philippines (UP) Manila, I finished my undergraduate degree with another academic scholarship from DOST. The greatest challenge I overcame during university was conducting thesis work amid the pandemic. With laboratory access restricted, we had to redirect most of our research direction using the few resources we had. Reaching out to Dr. Floirendo Flores from the University of the Philippines Los Baños (close to my hometown), I took the opportunity to join his lab and study efforts to address biocompatibility issues in local medicine. This global crisis instead became an opportunity for collaborative research between the two universities, combining tropical medicine development practices from UP Manila and bioengineering methods from UP Los Baños.

In drug development, the biocompatibility of drugs remains a constant challenge for oral administration. For my thesis at the university, I studied the local herbal remedy *A. muricata* (guyabano), typically consumed to improve the immune system and lower blood pressure. Maltodextrin, on the other hand, is an additive compound, typically used in vitamin efficiency improvement. Through the formulation of *guyabano* capsules encapsulated in maltodextrin, my project aimed to improve its biocompatibility parameters, starting with antioxidant capacity retention. For the project, I used spray-drying microencapsulation to formulate the *guyabano* microcapsules and Scanning Electron Microscopy to examine their morphology. The newly formed microcapsules resulted in a higher antioxidant capacity retention and spherical morphology than their previous counterparts without maltodextrin, which is a positive indication of structural integrity and their capacity to retain antioxidants.

Moving forward, tests could be performed to see if these plant microcapsules could retain their efficiency after consumption and be delivered effectively to their target site in the gut. Overall, combining new and existing strategies to improve drug delivery systems allows novel product development for usage in biopharmaceuticals and disease treatment.

To understand disease mechanisms, scientists are developing tools to narrow the gap between theoretical and applied medical knowledge. When studying omics, we examine the ‘totality’ of gene, protein, or metabolite level expression, which requires knowledge of handling large data sets. In my internship under Dr. Richie Soong, I learned how tools in computational genomics such as exome sequencing can be used to find potential candidate mutations for gastric cancer. This interest of mine carried on to my current work at the Philippine Genome Center, where I joined a collaborative research project on untargeted metabolomics funded by the United States – National Institutes of Health. With the latest technologies in High-Resolution Mass Spectrometry Analysis, we profile biomarkers that suggest the early onset of TB disease. From a clinical perspective, this could lead to finding strategies for early disease intervention. Along with the team, I was able to personally refine LC-MS data in an R environment and 1) identify upregulated and downregulated metabolites through the Compound Discoverer software, 2) find distinctive metabolic pathways in active TB and healthy patients, 3) validate our results through PRESAT Nuclear Magnetic Resonance spectral data, and 4) confirm the model’s validity and statistical significance through the MetaboAnalyst software.

Highly technical strategies are often necessary to perform research to find significant metabolic networks and biomarkers for disease intervention. At Michael Smith Laboratories, Vancouver’s leading research center for biotechnology and proteomics, my goal is to acquire techniques suitable for omics research focused on neurodegenerative diseases. In the Philippines, opportunities to explore research in genetics for neuroscience are still scarce. Omics is still a relatively new field in my country, with efforts for its use in the health sciences spearheaded by the Philippine Genome Center. Given the limits to my background in mass spectrometry, I look forward to gaining a more solid foundation in the field with courses in the program such as Proteomics and Functional Genomics. Hence, I want to pursue my higher studies in the Genome Science & Technology program to find my niche in the fields of metabolomics, epigenetics, and neurogenetics at the University of British Columbia, ultimately earning an MSc degree. After graduate school, I want to apply my studies from UBC to research in the Philippines and work with the Philippine Genome Center, whose research practices center on the diagnosis and treatment of genetic diseases in Filipino patients. On an academic level, I want to contribute to the establishment of a professional society for omics-driven technologies, recognizing their vast potential in research applications and fostering opportunities for collaboration.

While at University, I joined the Philippine Society of Youth Science Clubs. The organization partners with underprivileged schools nationwide to improve access to the latest knowledge and resources in science, technology, and the environment. Accommodating students at the primary and secondary levels, we hold yearly science camps and workshops nationwide, where the biggest challenge was communicating science to a much younger audience. With the team’s effort, we managed to establish two public libraries in remote areas in the country with limited access to educational resources. During my stay, I was able to take on various mentorship and leadership roles in the team, managing external events such as the National Science Club Month held in 17 regions nationwide. Overall, I believe that my experience fostering collaborative efforts beyond the academe is an asset I can bring to UBC during my graduate studies. I look forward to contributing to the institution’s commitment to foster a diverse and inclusive research community. Thank you for considering my application.

Sincerely,
Almeerah Naila Lawas



UNIVERSITY OF THE PHILIPPINES MANILA

Office of the University Registrar
OFFICIAL TRANSCRIPT OF RECORDS

Entrance Data: Name LAWAS, ALMEERAH NAILA
 Student No. 2018-07971 Sex Female
 Date/Semester admitted First Sem, AY 2018-2019 Date & Place of Birth 31 December 1999/ Quezon City
 Category New Freshman Father's Name Muhammad Aamir Safdar
 Diploma/Title/Degree High School Graduate Mother's Name Bernadette Lawas
 High School/College Philippine Science High School- Main Degree/Title/Course BACHELOR OF SCIENCE
 Date graduated/last attended AY 2017-2018 IN BIOCHEMISTRY (cum laude)
 S.O. No.: X-X-X-X-X
 Date: X-X-X-X-X Date Graduated 30 January 2023

COLLEGIATE RECORD		GRADES	
COURSE NUMBER	DESCRIPTIVE TITLE OF THE COURSE	FINAL	CREDITS
		Re-exam Completion	
COLLEGE OF ARTS AND SCIENCES			
First Semester, AY 2018-2019			
Mathematics 83	Essentials of Analysis I	1.75	5
Mathematics 101	Elementary Statistics	2.25	3
Chemistry 19	Principles of Chemistry	1.25	3
STS	Science, Technology and Society	1.25	3
Kas 1	Kasaysayan ng Pilipinas	1.00	3
P.E. 2	Circuit Training	2.00	(2)
NSTP	CWTS-1	1.50	(3)
Second Semester, AY 2018-2019			
Chemistry 29	Inorganic Chemistry I	1.50	5
Chemistry 33	Organic Chemistry I	1.25	5
Mathematics 84	Essentials of Analysis II	1.50	5
Communication 10	Critical Perspectives in Communication	2.00	3
P.E. 1	Foundations of Physical Fitness	1.50	(2)
NSTP	CWTS-2	1.00	(3)
Mid Year Term, AY 2018-2019			
Chemistry 111	Inorganic Chemistry I	1.50	3
Arts 1	Critical Perspectives in the Arts	1.25	3
P.E. 2	Social Dance	1.25	(2)
First Semester, AY 2019-2020			
Chemistry 36	Organic Chemistry II	2.25	5
Chemistry 43	Biochemistry I	1.50	5
Mathematics 85	Essentials of Analysis III	2.50	3
Physics 71	Elementary Physics I	2.25	4
Physics 71.1	Elementary Physics I Lab.	1.00	1
Second Semester, AY 2019-2020			
Chemistry 46	Biochemistry II	Pass	5
Chemistry 128	Analytical Chemistry II	Pass	5
Biology 110	Integrated Principles of Biology	Pass	5
Biochemistry 71	Professional Ethics, Legal and Social Sciences in Chemistry and Biochemistry	Pass	1
Physics 72	Elementary Physics II	Pass	4
Physics 72.1	Elementary Physics II Lab.	Pass	1
Mid Year Term, AY 2019-2020			
Science 10	Probing the Physical World	1.25	3
Ethics 1	Ethics and Moral Reasoning in Everyday Life	1.25	3
Mathematics 10	Mathematics, Culture and Society	1.25	3
First Semester, AY 2020-2021			
Wika 1	Wika, Kultura at Lipunan	1.25	3
Biology 120	Microbiology	1.25	5

Remarks Continued on next page

Grading System: 1.0 - Excellent; 1.25*-1.5 - Very Good; 1.75*-2.0 - Good; 2.25*-2.5 - Satisfactory; 2.75*-3.0 - Pass; 4.0 - Conditional; 5.0 - Fail; Drp - Dropped; Inc - Incomplete.

*Only for colleges and units officially adopting these additional grades.

Credits: One university unit of credit is one hour lecture or recitation each week for the period of a complete semester of 16 to 17 weeks. In all courses, two and a half to three hours of laboratory work, and, in technical courses, three hours of drafting or shop work, are regarded as the equivalent of one hour of recitation or lecture.

Note: This copy is an exact reproduction of the transcript on file with the Office of the University Registrar and is considered as an original copy when it bears the dry seal of the University and original signature in ink of the University Registrar. Any erasure or alteration made on this copy renders the whole transcript invalid.

Typed by JCLAUDIO Date 01/20/23
 Checked by [Signature] Date 02/20/23
 Updated by Joy Date 03/8/23
 Issued by [Signature] Date 03/12/23

[Signature]
 TRISTAN NATHANIEL C. RAMOS, DDM, MPH
 University Registrar

Name LAWAS, ALMEERAH NAILA

Student No. 2018-07971

COURSE NUMBER	DESCRIPTIVE TITLE OF THE COURSE	GRADES		CREDITS
		FINAL	Re-exam Completion	
COLLEGE OF ARTS AND SCIENCES				
First Semester, AY 2020-2021 (Cont'd)				
Chemistry 161	Physical Chemistry I	2.00		5
Chemistry 129	Analytical Chemistry 3	1.00		4
P.E. 2	Aerobics	1.00		(2)
Second Semester, AY 2020-2021				
CMSC 110	Foundations of Biocomputing	1.00		3
Chemistry 162	Physical Chemistry II	1.75		5
Biochemistry 121	Biochemistry of the Gene	1.50		3
Biochemistry 198	Seminar in Biochemistry	1.00		1
Biochemistry 122	Techniques in Biochemistry and Molecular Biology	1.50		2
Chemistry 163	Physical Chemistry III	1.50		3
Mid Year Term, AY 2020-2021				
Biochemistry 190	Practicum	1.00		3
First Semester, AY 2021-2022				
Biochemistry 125	Physical Biochemistry	1.50		5
Chemistry 112	Inorganic Chemistry II	1.50		3
Biochemistry 180	Biochemical Engineering	1.50		3
Biochemistry 181	Introductio to Bioinformatics	1.25		2
Biochemistry 199	Research Methods in Biochemistry	1.25		3
Second Semester, AY 2021-2022				
Chemistry 197	Special Topics in Applied Chemistry	1.00		3
Philippine Institutions 100	The Life and Works of Jose Rizal	1.50		3
Chemistry 173	Introduction to Medicinal Chemistry	1.00		3
Biochemistry 168	Environmental Biochemistry	1.75		3
Biochemistry 200	Thesis	Inc.	2.50	3
Mid Year Term, AY 2021-2022				
Residence				
First Semester, AY 2022-2023				
Residence				
GRADUATED WITH THE DEGREE OF BACHELOR OF SCIENCE IN BIOCHEMISTRY (cum laude) on 30 January 2023				

Remarks Cleared as of 9 March 2023

Grading System: 1.0 - Excellent; 1.25*-1.5 - Very Good; 1.75*-2.0 - Good; 2.25*-2.5 - Satisfactory; 2.75*-3.0 - Pass; 4.0 - Conditional; 5.0 - Fail; Drp - Dropped; Inc - Incomplete.

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Typed by J.CLAUDIO Date 01/20/23
 Checked by Robert Date 02/07/23
 Updated by Joy Date 03/8/23
 Issued by A Date 4/21/23


TRISTAN NATHANIEL C. RAMOS, DDM, MPH
University Registrar



University of the Philippines



A. Ma. Regidor Street, National Science Complex, U.P Diliman, Quezon City, 1101 ☎ +63 2 981 8500 loc. 4703/4704

9 December 2023

Graduate School Admissions
University of British Columbia

Dear Sirs and Madams,

Greetings from the Philippine Genome Center!

I am writing to recommend our employee, Ms. Almeerah Naila Lawas, for admission into your Graduate Program for Genome Science and Technology. I have known Ms. Lawas for about 10 months. She has been working in our facility as a science research specialist. Her main tasks were to assist in the analysis of Metabolomics data, and help facilitate client services. Despite the short time, I have seen that Ms. Lawas takes great initiative in conducting her work. As the project needed much optimization, Naila took it upon herself to test many different ways of screening the generated data in order to extract meaningful results.

Ms. Lawas undergraduate training provided her with a solid foundation on which to build a career in research. Her current occupation with us is providing experience on the implementation of many different types of research projects. We believe that acceptance into your graduate program can provide even more opportunities for her to experience different research fields, from which she then may choose an area in which she can specialize and contribute to the scientific community.

I hope you look kindly on her application.

Sincerely,

Neil Andrew D. Bascos, PhD
Associate Professor, NIMBB-UPD
Program Director, PGC-Protein, Proteomics and Metabolomics Facility

Genome Science and Technology Program Coordinator
100-570 West 7th Avenue
Vancouver, British Columbia, CANADA V5Z 4S6

December 09, 2023

To Whom It May Concern:

It is with great pleasure that I am recommending the admission of Ms. Almeerah Naila Lawas, a graduate of the BS Biochemistry program at the University of the Philippines Manila, to continue her studies as a student of the M. Sc. In Genome Science and Technology program at the University of British Columbia.

Ms. Almeerah Naila Lawas, or Mia as we call her, became my student in her Advanced Organic Chemistry Laboratory class, where she was able to learn about organic synthesis and organic spectroscopy. She was also my student in Advanced Biochemistry Laboratory class, where she was able to learn about metabolism experiments and assays involving clinical samples (ex analyzing serum alkaline phosphatase activity). In both classes, she demonstrated adeptness in doing working in the laboratory. Her precision in using several instruments stood out among her classmates. She also displayed excellent writing skill every time she would furnish her laboratory report. Furthermore, Mia was able to assert herself during class as she was able to take initiatives in situations where some experiments would not go as planned, in which she would come up with solutions that would help her group to move forward.

Scholastically speaking, Mia was consistently awarded as University Scholar (GWA of 1.0-1.25, excellent, or 94.25-100 rating) for two semesters and College Scholar (GWA of 1.25 to 1.75, very good, or 88.75 to 94.25 rating) for another two semesters. I believe that she is part of the top 5% of her class.

Given all of the statements above, I believe that Mia has the intellectual capacity, character, and the necessary skill set to fit with the demands of the program. I am also positive that should you accept Mia, she should be able to finish the research program with flying colors.

Thank you.

Best Regards,

Mark Jeremiah Cleofas, M. Sc.



Office of the Dean

December 10, 2023

**The Admissions Committee
M.Sc. in Genome Science and Technology Program
University of British Columbia**

It is with pleasure that I am strongly recommending the application of Ms. Almeerah Lawas for graduate studies in your institution. Almeerah was my student in 3 major biochemistry courses about 2 years ago. She consistently performed well, obtaining grades that ranked her in the upper half of her class. Although our personal interactions were limited due to the remote instruction set up during the time she was my student, I could see that she was a conscientious and diligent student, and was always up to date with class requirements and performs well relative to her classmates. She is a good communicator, based on reports that she gave in class, both orally and in writing. She and the rest of her peer group demonstrated adaptability in the unavoidable transition and accompanying adjustments to online instruction that had to be made due to the pandemic.

Almeerah is highly motivated and pursues opportunities that will bring her closer to her goal of being a successful research scientist; for example, actively seeking out training opportunities that would deepen her exposure to biosciences research and attending conferences and workshops that will widen her knowledge and skills, and communicating with scientists whose work she is interested in. She was a clinical research intern for precision medicine, and is currently conducting research work on Tuberculosis biomarkers for children with untargeted LC-MS metabolomics at the Protein, Proteomics, and Metabolomics Facility at the Philippine Genome Center.

I believe that she has the work ethics, academic skills and emotional maturity that would ensure success in her chosen field, and will be an asset to any program that she joins. With quality training and exposure to high – caliber science, she will be a very much needed addition to the relatively small pool of well – trained research scientists who can further advance science research and technology here in the Philippines.

Thank you very much.

Very truly yours,

MARIA CONSTANCIA O. CARRILLO, PhD
Professor and Dean

