

PHOENICIA UNIVERSITY

Innovation . Inspiration . Integrity

College of Public Health

Suggested Public Health Degree Plan

Updated and Effective Fall 2025-2026

www.pu.edu.lb

College of Public Health

Bachelor of Science in Public Health

Health Analytics and Artificial Intelligence (HA&AI) Focus

Program Description

The Bachelor of Science (BS) in Public Health with a focus on Health Analytics and AI at Phoenicia University equips students with a comprehensive, interdisciplinary education, combining core principles of nutrition, health promotion, education, communication, and project management with hands-on training in health data science and artificial intelligence. Our curriculum prepares graduates to tackle local and global health challenges by teaching them not only how to design, implement, and evaluate public-health interventions, but also how to leverage statistical programming, machine learning, GIS, natural-language processing, and interactive dashboards within a framework of ethical data governance. This integrated approach lays the foundation for careers or advanced study in public health, health informatics, policy analysis, and other data-driven health professions.

The Bachelor of Science in Public Health program at Phoenicia University requires students to complete 128 credit hours at the freshman level and 98 credit hours for those joining as sophomores. Of the total credit hours required, 68 credit hours must be completed in major courses, with the remainder allocated to general education courses.

Graduation Requirements

- Students must obtain a minimum "Program GPA" of 2.0; no rounding (e.g., a GPA of 1.99)—whatsoever—will be applied.
- Students must obtain a minimum "Cumulative GPA" of 2.0; no rounding (e.g., a GPA of 1.99)— whatsoever—will be applied.
- Students must obtain "Graduation Clearance" as detailed in the following section.

University Graduation Requirements (30 credits hours)

To graduate with a Bachelor of Science in Public Health, students will need 30 credit hours in university general requirements, in addition to the college graduation requirements. The 30 credit hours in general educational requirements for degree programs include the following:

- 3 credits in Basic Sciences (General Biology)
- 3 credits in Social Sciences

- 6 credits in English (English I and English II)
- 6 credits in Civilization (World Civilization and World Civilization)
- 3 credits in Arabic
- 3 credits in Communication (Public Speaking)
- 3 credits in Computing (Introduction to Computing for Arts)
- 3 credits in Globalization & World Cultures

Public Health Graduation Requirements (68 credit hours)

The College of Public Health requirements for the BS degree program includes the following additional requirements:

• 68 credits of mandatory core public health courses (including 2 credits for a professional internship program)

Graduation Clearance

Upon reaching senior-level status, students must fill out the graduation clearance form after completing all their degree requirements. The graduation clearance form should be signed by the following personnel: Departmental Coordinator, Dean of College, IT Director, Library Coordinator, Finance Director, Registrar Director, Career Center Director, Head of the Exit Interview Committee, President, and Chancellor. Failure to do so will delay graduation.

Course Descriptions

Core Courses

PBHL 201. Introduction to Public Health - 3cr.

This course provides an overview of the history, values, concepts, and disciplines within the field of public health. Students gain an understanding of how various elements—such as biological, anthropological, environmental, social, economic, and political factors—are closely intertwined with health, healthcare, and disease at the individual, community, and population levels. They also build foundational quantitative-literacy skills by summarising and visualising population-health indicators, guided by principles of ethical data stewardship. The course also introduces the organization, management, and provision of public health and health systems in Lebanon, the Arab World, and beyond. **Estimated Workload: 135 hrs.**

PBHL 202. Population Health and Disease Prevention - 3cr.

This course provides a foundational understanding of human health and disease, emphasizing the key systems of the human body and prevalent communicable and non-communicable diseases. It delves into disease transmission, symptoms, treatment, prevention, and control among various populations. The course also covers socio-economic, behavioral, biological, and environmental determinants of health, highlighting their impact on human health and their role in creating health disparities among populations. Embedded laboratory sessions extend these concepts through introductory analytics such as calculating disease-occurrence measures, plotting epidemic curves, and applying basic predictive models to support early detection and response. **Prerequisite: PBHL 201; Concurrent Prerequisite: BIOL 201; Estimated Workload: 135 hrs.**

PBHL 203. Program Planning, Implementation and Evaluation - 3cr.

This course offers an in-depth exploration into fundamental principles and strategies for identifying and addressing population health challenges and needs. Students will be introduced to community needs assessment, in addition to key planning, implementation, and evaluation concepts, tools, frameworks, and methodologies, which are essential for the development and execution of effective public health interventions. Students will also learn how to critically evaluate information sources, identify gaps in data, and employ evidence-based principles in public health program development and evaluation. Analytic labs guide students through approaches for population segmentation with clustering methods and the creation of real-time monitoring dashboards, illustrating how AI-enhanced metrics can be woven into program logic models for continuous evaluation. Concurrent Prerequisite: INFO 404, DSAI 401; Prerequisite: PBHL 202; Estimated Workload: 135 hrs.

PBHL 204. Health Behavior, Promotion and Education - 3cr.

This course provides a comprehensive exploration of health promotion and education, with an indepth look at theoretical underpinnings of the fields, with a focus on health behavior theories. The course emphasizes the importance of health literacy in decision-making and explores methods to improve it across diverse populations. Students will explore exemplary health promotion projects, focusing on theoretical frameworks, intervention methods, and evaluation designs. Students will also apply data-driven audience-segmentation and sentiment-analysis techniques to refine campaign messages and measure engagement, demonstrating how analytics can strengthen behavior-change strategies. The course culminates in the development of a health promotion and education campaign proposal. Concurrent Prerequisite: INFO 404, DSAI 401; Prerequisite: PBHL 202; Estimated Workload: 135 hrs.

PBHL 205. Economy in Healthcare - 3cr.

This course examines the field of health economics that is used to promote health through the study of health care providers, hospitals and clinics, managed care and public health promotion activities. By applying economic theories of consumer, producer, and social choice, students will understand the behavior of individuals, health care providers, public and private organizations, and governments in decision-making. Practical labs introduce cost-effectiveness modelling and basic time-series forecasting, enabling students to translate economic theory into data-informed resource-allocation scenarios for real-world health interventions. **Prerequisite: PBHL 201; Concurrent Prerequisite: ACCT 201, INFO 404, DSAI 401; Estimated Workload: 135 hrs.**

PBHL 206. Policy and Advocacy in Public Health - 3cr.

This course introduces students to legal, ethical, economical, and regulatory dimensions of public health policy. This includes gaining a basic understanding of the public health policymaking process and the foundational elements of advocacy. Students will understand the roles of government agencies and branches in shaping health policy and gain insights into the Lebanese health system's structure and compare it with systems in other countries. The course culminates in writing a policy brief or planning an advocacy campaign related to public health in Lebanon. **Prerequisite: PBHL 201; Concurrent Prerequisite: PBHL 208; Estimated Workload: 135 hrs.**

PBHL 207. Essentials of Health Research - 3cr.

This course offers a foundational training in research methodologies and effective presentation techniques, guiding students in identifying relevant health issues, data analysis, ethical research conduct, and dissemination strategies. The importance of community engagement and community-based participatory research will be emphasized. Students will learn how to form research questions and be introduced to both quantitative and qualitative research methods. The course also guides students in developing ethical review board proposals, research project proposals, and grant proposals. Integrated workshops help students understand reproducible data pipelines and draft datagovernance briefs that address privacy and algorithmic fairness. Additionally, students will critically evaluate research and learn about manuscript submission and dissemination. **Prerequisite: Junior Standing; Estimated Workload: 135 hrs.**

PBHL 208. Health Communication - 3cr.

This course equips students with the theoretical knowledge and practical skills necessary for effective health communication in diverse settings and audiences. The course explores approaches to effectively frame communication and design impactful public health campaigns through utilizing social media, mass media and information technology. A significant focus is placed on teaching

students how to inform, empower, and persuade individuals and communities to adopt healthier lifestyles, as well as to engage in public debate and influence health policy. Laboratory sessions introduce how natural-language-processing and A/B-testing techniques can be used to mine audience feedback and optimise message delivery in real time. Prerequisites: PBHL 201 and ENGL 201; Concurrent Prerequisite: INFO 404, DSAI 401, COMM 214; Estimated Workload: 135 hrs.

PBHL 211. Nutrition in Public Health and Disease Prevention - 3cr.

This course offers an integrated understanding of the intricate relationship between nutrition, health, and disease, both at an individual and population level. It delves into the definitions, identification, and prevention of nutrition-related diseases, focusing on population health improvement through enhanced nutrition. Students will also critically assess existing nutritional programs and policies, identifying their strengths, weaknesses, and potential areas for modification. Hands-on analytics labs guide students in utilizing risk-prediction models and AI-informed nutrition interventions, demonstrating how data-driven insights can sharpen programme targeting and effectiveness. Concurrent Prerequisite: INFO 404, DSAI 401; Prerequisite: PBHL 202; Estimated Workload: 135 hrs.

PBHL 212. Food Security and Safety - 3cr.

This course introduces concepts and principles of food security and safety. It explores the development and implementation of food safety protocols, including HACCP plans, traceability, and recall mechanisms. The course then delves into the broader concept of food security, examining its core principles: availability, accessibility, utilization, and stability. The course also integrates food system management at both local and global levels, with a focus on policy, economic perspectives, and planning. Students will also evaluate local food industries and establishments through supervised hands-on experiences. The course integrates analytics components to train students to forecast foodborne-illness trends and map supply-chain vulnerabilities. **Prerequisite: PBHL 211; Estimated Workload: 135 hrs.**

PBHL 213. Healthcare Management and Administration - 3cr.

This course offers an in-depth exploration into the multifaceted world of Healthcare Administration and Management. The course into the intricacies of the healthcare system, policy development, and the economic implications of healthcare decisions. Additional focus areas include quality management, accounting and financial principles in healthcare settings, change management, and strategic decision-making within ethical and regulatory frameworks. Applied sessions teach students to build and interpret performance dashboards and run basic patient-flow simulations,

illustrating how data-driven insights can guide operational and staffing decisions. Prerequisite: PBHL 205, Concurrent Prerequisites: MNGT 201 and PBHL 206; Estimated Workload: 135 hrs.

PBHL 220. Fundamentals in Environmental Health - 3cr.

This course examines the impact of environmental health issues and the role of environmental factors in health with an emphasis on characterization, assessment, and control of environmental hazards. The specific topics covered during this course include safe water, sanitation, and hygiene (WaSH), air quality, hazardous waste disposal, climate change, occupational health, and environmental disease clusters. Laboratory components incorporate geospatial analysis and introductory predictive modelling, enabling students to map exposures and project climate-related health impacts. The course concludes by analyzing how human activity and resulting environmental change impact public and planetary health, alongside a review of Lebanese environmental laws and policies. Concurrent Prerequisite: INFO 404, DSAI 401; Prerequisite: PBHL 201; Estimated Workload: 135 hrs.

PBHL 270. Essentials in Epidemiology and Biostatistics

This workshop offers a comprehensive introduction to biostatistics and epidemiology, essential components of public health science. In biostatistics, students will learn to collect, manage, and analyze data, applying biostatistical methods like hypothesis testing and regression, supported by hands-on computer lab sessions. The epidemiology segment focuses on understanding the distribution and determinants of health-related states in populations. Students will learn about epidemiologic study designs, methods, and their applications in public health research, including the planning, interpretation, and effective communication of research findings. Laboratory exercises introduce reproducible coding practices and entry-level machine-learning tools that complement traditional statistical methods. **Prerequisites: PBHL 203, PBHL 207, STAT 201 and CMPS 202; Estimated Workload: 135 hrs.**

PBHL 280. Integrative Learning Experience - 2cr.

This course offers an opportunity for students to integrate their learning experience and competencies into a public health project, while integrating a data-science or AI component. Under the guidance of faculty members, students may pursue a variety of projects, including research projects, community assessments, pilot implementation projects, training curriculum design, policy analyses or briefs, and others. The course culminates in a formal presentation where students share their findings. **Prerequisite: Senior Standing; Estimated Workload: 90 hrs.**

PBHL 281. Global Health Seminar – 1cr.

This seminar provides students with an opportunity to analyze, present, and discuss peer-reviewed academic articles and case studies focusing on public or global health. Student will also engage in critically appraising and discussing public and global health articles and invited lectures, in a journal club format. **Prerequisite: Senior Standing; Estimated Workload: 45 hrs.**

PBHL 282. Professional Internship - 2cr.

This internship offers a period of guided work experience, supervised by faculty member and designed to acquaint students with the public health profession and help them acquire skills necessary for finding future work. Prerequisites: PBHL204, PBHL 207, PBHL 208, PBHL 212, PBHL 270 and BCOM 300.

STAT 201. Statistics - 3cr.

This course promotes students' statistical literacy and reasoning as it draws on the four main area s of statistics: descriptive statistics, associative statistics, inferential statistics and probability and statistics. The course offers a general introduction to the role, importance and significance of statistics in real-life situations and scenarios with practical emphasis on major-related settings. The course stresses a critical read and analysis of qualitative and quantitative data: graphical and numerical descriptive analysis. Additionally, the course deals with probability, discrete random variables and their probability distributions, binomial distribution, normal distribution, simple linear regression, sampling and hypothesis testing. **Estimated Workload: 135 hrs.**

INFO 404. Introduction to Data Science - 3 cr.

Introduction to Data Science integrates computing, statistics and visualization and communication into the one course. The course is particularly helpful in building hands-on experience with data manipulation and analysis to finally presenting impressive results. Such results are core to enhance decision-making activities, transforming the workplace into a data driven mini-society. Students from Marketing and Entrepreneurship concentration area can take this course as well. Prerequisites: CMPS 202 or equivalent and STAT 201; Estimated Workload: 135 hrs.

DSAI 401. Artificial Intelligence: Innovation and Applications - 3 cr.

This course provides a practical and multidisciplinary exploration of Artificial Intelligence (AI) and its transformative applications across sectors, including marketing, operations, finance, human resources, customer service, public health and social media. Throughout the course, students will learn fundamental AI concepts such as machine learning, deep learning, and natural language processing, while understanding the distinction between narrow and general AI.

The course integrates real-world use cases that demonstrate AI's impact across sectors, such as research, content generation and personalization, decision-making, process automation, customer engagement, financial forecasting, predictive health analytics, disease surveillance, sentiment analysis, social media analytics, and audience targeting. Students will learn how to employ user-friendly, non-coding platforms to explore AI-driven tools and solutions relevant to their respective disciplines. The course also delves into the ethical considerations, governance frameworks, emerging trends and the societal implications of AI.

The course concludes with a capstone project where students collaborate to design AI-driven solutions to field-specific challenges, demonstrating the practical application of AI concepts and tools. **Estimated Workload: 135 hrs.**

CHEM 201. General Principles of Chemistry - 3cr.

This course introduces students to the general principles and theories of chemistry. It covers atomic structure, chemical bonding, stoichiometry, mass spectrum, properties of gases, basic thermodynamics, kinetic theory, solids and liquids, solutions, acids and bases and chemical equilibrium; Estimated Workload: 135 hrs.

CHEM 202. Introduction to Chemical Laboratory Techniques-2cr.

This is a laboratory course that introduces students to chemical analysis in a series of laboratory experiments covering principles and experimental techniques in thermochemistry, kinetic and electrochemistry. Students learn to handle basic tools and equipment and conduct wet chemistry experiments. Prerequisite or Corequisite: CHEM 201; Estimated Workload: 90 hrs.

CHEM 209. Basic Organic Chemistry - 3cr.

This course emphasizes on the relationship between the structure and properties of Carbon containing molecules; it also covers stereochemistry and reactions of important functional organic groups. **Estimated Workload: 135 hrs.**

CHEM 210. Basic Organic Chemistry Lab - 1cr.

This course covers basic experiments in organic chemistry; students will develop skills in conducting several organic reactions through hand-on laboratory techniques of extraction, distillation, chromatography and many others. **Prerequisite or Corequisite: CHEM 209: Estimated Workload: 45 hrs.**

COMM 214. Interpersonal Communication - 3cr.

This course is an overview of interpersonal communication, which is the exchange of symbols used to achieve self-presentation, relational and instrumental goals. The course includes the study and practice of the basic elements of interpersonal communication with emphasis on perception, meanings, attention, listening, feedback and communication barriers. Particular attention is given to improving interpersonal communication skills. **Concurrent Prerequisite: ENGL 201; Estimated Workload: 135 hrs.**

ACCT 201. Financial Accounting I - 3 cr.

In this course, students are introduced to the basic concepts and tools underlying financial accounting systems. Topics covered include: revenue recognition, inventory, accounts receivables, accounts payables, long-term assets, present value of money and long-term liabilities. The course also covers the construction of the basic financial accounting statements—the income statement, balance sheet and cash-flow statement—as well as their analysis and interpretation. **Estimated Workload: 135 hrs.**

MNGT 201. Principles of Management and Organizational Behavior - 3 cr.

This is an introductory course that covers the management process with particular emphasis on the skills and knowledge needed to successfully manage an organization in an effective and efficient way. This course introduces the basic functions of management, including the planning, organizing, leading and controlling functions. Topics covered include: history and schools of management thoughts, managerial functions and roles, ethics and corporate social responsibility, operational and strategic planning, organizational behavior, dealing with change, operations management, human resource management, motivation, leadership and managerial communication. **Concurrent Prerequisite: ENGL 201; Estimated Workload: 135 hrs.**

BCOM 300. Workplace Etiquette

This is a mandatory workshop that all students should successfully complete prior to their internships. The course comprises a series of workshops that focus on workplace etiquette and communication in formal and professional settings. In this course, students develop their business etiquette and professional practice skills in addition to their presentation skills so that they are well-equipped for their internships. **Prerequisite: ENGL 201.**

General Education Courses

ENGL 201. English I - 3 cr.

This course focuses on improving students' reading and comprehension skills and guides them through the process of writing short essays of various types such as classification, argumentation, and critique. Students are also expected to develop their listening and speaking skills, as well as grammar and vocabulary through a variety of course requirements such as class presentations and debates. **Prerequisite: Sophomore Standing; Estimated Workload: 135 hrs.**

ENGL 202. English II - 3 cr.

This course focuses on enabling students to use a variety of strategies to read academic and nonacademic texts to build vocabulary in context. Readings from a wide range of topics will challenge students to practice and develop their language skills through discussions and written responses. Students will practice their critical thinking skills as they analyze and evaluate the readings and express their own ideas. Students enhance their research skills through collecting and analyzing information from various sources available in the library and on the Internet, and write short essays based on their critical reading of selected articles. The course requires oral presentations in class and a number of writing assignments. **Prerequisite: ENGL 201; Estimated Workload:** 135 hrs.

ARAB 201. Arabic - 3 cr.

This course focuses on improving students' writing skills pertinent to academic work such as writing an argumentative essay and a research report. Students read selected classical and contemporary literature, lead class discussions, give oral presentations and prepare a short research paper on a current topic. **Estimated Workload: 135 hrs.**

SOCL 210. Globalization & World Cultures - 3 cr.

This course focuses on the practical and theoretical issues arising from globalization and cross-cultural encounters around the world. Students will acquire a strong grounding in global affairs and an understanding of the complex phenomenon of globalization. It will also help students anticipate the social, economic and political changes brought about by globalization and the resistance to it, along with the critical knowledge and skills that will set them apart in this new world and help them succeed in an increasingly globalized context. **Concurrent Prerequisite: ENGL 202; Estimated Workload: 135 hrs.**

CIVL 201. World Civilizations I - 3 cr.

This course examines the main social, economic and political features of Classical, Medieval, Islamic, and Renaissance Civilizations beginning with the Mesopotamian civilization era circa 3500 B.C. The course emphasizes the achievements of great civilizations in sciences and arts. Students are required to read, discuss and reflect on selected texts. Concurrent Prerequisite: ENGL 201; Estimated Workload: 135 hrs.

CIVL 202. World Civilizations II - 3 cr.

The course examines the major changes in global cultures and civilizations from the seventeenth century onward. In this course, students explore the rise of modernity and enlightenment, as well as the major cultural and intellectual features of the nineteenth and twentieth centuries. Topics covered include the philosophies and literary trends of enlightenment, scientific advancement, radical critique, the rise of psychology, colonialism and post-colonialism, and the culture of liberation.

Prerequisite: CIVL 201; Estimated Workload: 135 hrs.

BIOL 201. General Biology - 3 cr.

This course introduces students to the levels of life's organization starting with characteristics of living organisms including bacteria, viruses, fungi, and plants, structures, functions and division of living cells, and concluding with the expression of genetic information: transcription and translation. In addition, students tackle exercises in genetics to help grasp the main modes of inheritance. Finally, the course stresses how organisms are linked together by lines of descent from shared ancestors. The core laboratory component integrated into this course provides students with an introduction to a diverse set of analytical and quantitative skills essential for investigating the histology of different cells and tissues. Additionally, through the lab, students will develop effective communication of fundamental scientific concepts, both through written assignments and oral presentations; **Estimated Workload: 135 hrs.**

COMM 201. Public Speaking - 3 cr.

This course is a university requirement for all students. It aims at developing students' ability to speak fluently and effectively in public. The course discusses the characteristics of various types of speeches and speech situations. Students have to write and deliver speeches for various occasions and to different audiences and to use visuals and slideshows. **Concurrent Prerequisite: ENGL 201; Estimated Workload: 135 hrs.**

CMPS 202. Introduction to Computing for Arts - 3 cr.

This course offers a broad introduction to the field of computer science, intended for arts students only. Topics include: history of computing, social issues in computing, the Internet and the World Wide Web, and social media. Students also learn common applications such as word processing, spreadsheets, and database systems; Estimated Workload: 135 hrs.

Degree Plan

(1) Public Health Courses					
Core Public Health Courses	66 credits				
Professional Internship	2 credits				
Total Public Health Courses	68 credits				
(2) General Education	n Courses				
Civilization	6 credits				
English	6 credits				
Communication	3 credits				
Arabic	3 credits				
Basic Sciences	3 credits				
Social Sciences	3 credits				
Globalization & World Cultures	3 credits				
Computing	3 credits				
Total GE courses	30 credits				
Total	98 credits				

Suggested Public Health Degree Plan

First Year					
Fall 1			Spring 1		
Course	Title	Wt.	Course	Title	Wt.
BIOL 201	General Biology	3	ENGL 202	English II	3
ENGL 201	English I	3	PBHL 202	Population Health and Disease Prevention	3
STAT 201	Statistics	3	PBHL 220	Fundamentals in Environmental Health	3
CMPS 202	Introduction to Computing for Arts	3	ACCT 201	Financial Accounting I	3
PBHL 201	Introduction to Public Health	3	INFO 404	Introduction to Data Science	3
Total Credits		15		Total Credits	15

Summer 1				
Course	Title	Wt.		
CIVL 201	World Civilizations I	3		
DSAI 401	Artificial Intelligence: Innovation and Applications	3		
Total Credits				

Fall 2		Spring 2			
Course	Title	Wt.	Course	Title	Wt.
COMM 214	Interpersonal Communication	3	PBHL 207	Essentials of Health Research	3
PBHL 203	Program Planning, Implementation and Evaluation	3	PBHL 208	Health Communication	3
PBHL 204	Health Behavior, Promotion and Education	3	PBHL 212	Food Security and Safety	3
PBHL 205	Economy in Healthcare	3	MNGT201	Principles of Management and Organizational Behavior	3
PBHL 211	Nutrition in Public Health and Disease Prevention	3			
BCOM 300	Workplace Etiquette (Mandatory Workshop)		PBHL 270	Essentials in Epidemiology and Biostatistics (Mandatory Workshop)	
Total Credits		15		Total Credits	12

Summer 2			
Course	Title	Wt.	
PBHL 282	Professional Internship	2	
Total Credits			

Third Year					
Fall 3		Spring 3			
Course	Title	Wt.	Course	Title	Wt.
PBHL 206	Policy and Advocacy in Public Health	3	SOCL 210	Globalization & World Cultures	3
PBHL 213	Healthcare Management and Administration	3	COMM201	Public Speaking	3
ARAB 201	Arabic	3	CIVL 202	World Civilizations II	3
CHEM 201	General Principles of Chemistry	3	PBHL 280	Integrative Learning Experience	2
CHEM 202	Introduction to Chemical Laboratory Techniques	2	PBHL 281	Global Health Seminar	1
XXXXXX	Social Science Elective	3	CHEM 209	Basic Organic Chemistry	3
			CHEM 210	Basic Organic Chemistry Lab	1
Total Credits		17		Total Credits	16



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