PHOENICIA UNIVERSITY

Innovation . Inspiration . Integrity

College of Arts and Sciences

Course Descriptions Catalog

2023-2024

College of Arts and Sciences (CAS)

Graduation Requirements

University Graduation Requirements (30 credits hours)

To graduate with a Bachelor of Arts or a Bachelor of Sciences Degree, students will require 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 will include the following:

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

College of Arts and Sciences Graduation Requirements (60-61 credit hours) *

The College of Arts and Sciences requirements for the BA and BS degree programs will include additional requirements (60-61 credit hours).

Program requirements include a set of core courses in the major and a number of elective courses. These courses and/or number of credit hours required are listed under the program of study for each program.

Graduation from any program in the College with a BA or BS degree requires the completion of 90 or 91 credit hours (depending on the program) starting from the sophomore year.

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.

1. Department of Basic Sciences

The Department of Basic Sciences has the following objectives:

- Meet the university requirements in basic sciences by offering a host of courses in various disciplines of basic sciences
- Offer courses that are required for some majors in the College of Arts and Sciences and for majors at other colleges at PU particularly the College of Engineering
- Expose students to the theoretical approaches and methodology of basic sciences in order to cultivate their interdisciplinary perspectives and prepare them for a lifetime of critical inquiry within a liberal arts education framework
- Promote students' skills in oral and written communication, collaboration, creativity, and lifelong and self-directed learning.

Course Descriptions

CHEM 101. General Principles of Chemistry I - 3 cr.

This course is an introductory one that prompts students' citizenship in scientific thinking (chemistry), covering the following topics: the atomic structure, chemical reactions, solutions, gas laws, stoichiometry, periodic relationships among the elements, chemical bonding and other basic concepts.

CHEM 201. General Principles of Chemistry - 3 cr.

This course introduces students to the general principles and theories of chemistry. Topics covered include: atomic structure, chemical bonding, stoichiometry, mass spectrum, properties of gases, basic thermodynamics, kinetic theory, solids and liquids, solutions, acids and bases, and chemical equilibrium. In this course, students connect these principles and theories to real-life examples.

CHEM 202. Introductory Chemical Techniques (lab) - 2 cr.

This course prompts students' experiential learning and inquiry in analytical chemistry through a series of laboratory experiments covering principles and experimental techniques in thermochemistry, kinetic and electrochemistry. In this course, students learn to handle basic tools and equipment as they conduct wet chemistry experiments. **Concurrent prerequisite: CHEM 201.**

CHEM 209. Basic Organic Chemistry - 3 cr.

This course is an introductory one in organic chemistry. The course stresses the relationship between the structure and properties of carbon containing molecules; it also covers stereochemistry and reactions of important functional organic groups.

CHEM 210. Basic Organic Chemistry Lab - 1 cr.

This course prompts basic experiments in organic chemistry. Students will develop experiential knowledge and skills in carrying several organic reactions through hands-on laboratory techniques of extraction, distillation, chromatography, and many others. **Concurrent prerequisite: CHEM 209**

BCHM 208. Fundamentals of Biochemistry - 3 cr.

This course covers the study of the biochemistry of organic compounds which includes the regulation of carbohydrates, lipids, proteins, and nucleic acids, as well as their enzymatic degradation and intermediary metabolism.

PHYS 101. Introductory Physics I - 3 cr.

This course deals with measurements, motion in one dimension, vectors, motion in two dimensions, Newton's laws with applications, work and energy, circular motion, linear momentum and collisions, rotation and angular momentum, oscillations, gravity, and elements of fluid mechanics. **Prerequisite: MATH 101.**

PHYS 201. Introduction to Physics - 3 cr.

This course introduces students to different areas in classical physics: mechanics, fluid statics, fluid dynamics, temperature, heat, thermodynamics, kinetic theory of gases, heat engines, general properties of waves, sound waves and resonances, light and optics, interference, diffraction, and polarization.

PHYS 202. Introduction to Physics Lab- 1 cr.

This laboratory course stresses experimental knowledge to complement the theoretical knowledge learned in the introductory physics course. It includes a set of experiments such as Atwood's machine, motion down the incline, friction, Hooke's law, conservation of mechanical energy, buoyancy, heat and temperature, standing waves on a string, standing waves in air columns, reflection and refraction, and Brewster angle. **Concurrent prerequisite: PHYS 201**

PHYS 210. Electronics - 3 cr.

This course is an introduction to physical electronics including DC and AC circuit theory and network analysis. It covers: band pass filter. It also explores semiconductor devices: diodes, DC power supplies, transistors, analysis and design of basic amplifiers, operational amplifiers, logic gates, timers, multiplexers, flip-flops, and counting circuits.

PHYS 211. Electronics Lab - 1 cr.

This laboratory course stresses experiential knowledge to complement the electronics course. It includes experiments on: DC measurements, periodic waveforms, power supplies, transients, frequency and period measurements, operational amplifiers, and some digital circuits. **Concurrent prerequisite: PHYS 210**

BIOL 101. Basic Concepts in Biology - 3 cr.

This course aims to build a foundation in the knowledge of the principles of biochemistry, genetics, and molecular biology. In this course, students employ these principles to understand the functions and evolution of living systems. Students also explore the structure and regulation of genes and proteins, how these important molecules interact and are integrated within the cells, and how these cells are integrated into multicellular systems and organisms. Towards the end of the course, students select topics of interest in biology to explore and discuss in the classroom.

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.

ENVT 201. Introduction to Environmental Science - 3 cr.

This course investigates the role of humans in their environment. Students learn about their biological and physical environment. This information leads to the exploration of the human dependence on the environment and the social, technological, and industrial factors which impact the human attitude and behavior towards the environment. Emphasis is placed on sustaining resources and making informed choices concerning environmental issues.

2. Department of Humanities

The Department of Humanities has the following objectives:

- Meet the university requirements in humanities by offering a host of courses in selected disciplines of humanities particularly Arabic and English languages
- Offer courses that are required for some majors in the College of Arts and Sciences

- Develop students' knowledge and skills in academic Arabic and English in order to prepare them to succeed in their academic majors and in their future careers

- Cultivate students' interdisciplinary perspectives and prepare them for a lifetime of critical inquiry within a liberal arts education framework
- Promote students' skills in oral and written communication, collaboration, creativity, and lifelong independent learning

Course Descriptions

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.

ARAB 202. Advanced Arabic - 3 cr.

This course is a more advanced Arabic course which focuses on developing 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. In this course, students advance their Arabic grammar capabilities and their capabilities in Arabic rhetoric, including students' abilities to confidently employ metaphors and figures of speeches in their communication, both oral and written.

INEG 200. Intensive English 2 - 0 cr.

This fifteen-hour per week course is designed for low intermediate students who need to further develop their skills to enable them to cope with college-level courses. Reading themed topics, discussing them, writing about them and giving oral presentations will increase students' fluency and accuracy in English. Students' reading, writing, listening, and speaking capabilities are concurrently developed throughout this course. Students who are placed in this course may take one academic course for credit.

INEG 300. Intensive English 3 - 0 cr.

This ten-hour per week course is for intermediate level students and focuses on more complex reading skills, as well as longer essays. Reading, writing, listening, and speaking capabilities are concurrently prompted throughout various tasks and activities. Students who are placed in this course may take two courses for credit.

ENGL 101A. Freshman English (Reading & Listening) - 3 cr.

This course is for sophomore and freshman students to advance their English language skills, particularly reading and listening. In this course, students are exposed to various reading texts and listening tasks. Sophomore students receive no credits for this course. **Corequisite: ENGL 101B**

ENGL 101B. Freshman English (Writing & Speaking) - 3 cr.

This course is for sophomore and freshman students to advance their English language skills, particularly writing and speaking. In this course, students are exposed to various writing and speaking tasks. Sophomore students receive no credits for this course. **Corequisite: ENGL 101A**

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**

ENGL 202. English II - 3 cr.

This course focuses on enabling students to use a variety of strategies to read academic and non-academic 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**

ENGL 203. Introduction to Creative Writing - 3 cr.

This course introduces students to various forms of creative writing in fiction, non-fiction, poetry, drama, short film or novel. The course is run in the form of workshops where students share their writing with each other, and each is required to prepare a portfolio of original work. **Prerequisite: ENGL 202**

3. Department of Mathematics and Informatics

- Required and elective courses in mathematics and statistics
- BS in Computer Science

- **Mathematics**

The Department of Mathematics has the following objectives:

- Meet the university requirements in mathematics by offering a host of courses in mathematics and statistics
- Offer courses that are required for some majors in the College of Arts and Sciences and for majors at other colleges at PU
- Expose students to the theoretical approaches and methodology of mathematical sciences in order to cultivate their interdisciplinary perspectives and prepare them for a lifetime of critical inquiry within a liberal arts education framework
- Promote students' skills in critical thinking, problem solving, creativity, and lifelong independent learning

Course Descriptions

MATH 101. Calculus and Analytic Geometry I - 3 cr.

The course covers basic concepts and methods in calculus and maps mathematics to real-life examples and situations. In this course, students go beyond mathematical procedural knowledge to acquire conceptual knowledge, procedural fluency and flexibility, and mathematical connections. Topics covered include: types and families of functions, limits, continuity, differentiation with application to curve plotting and Rolle's theorem. This course also covers integration with application to area, distance, volume, and arc-length.

MATH 102. Calculus and Analytic Geometry II - 3 cr.

The course covers concepts and methods in calculus and maps mathematics to real-life examples and situations. In addition to procedural knowledge, students develop their conceptual knowledge, procedural fluency and flexibility, and mathematical connections through covering the following topics: methods of integration, improper integrals, polar coordinates, conic sections, analytic geometry in space, parametric equations, and vector functions and their derivatives. **Prerequisite: MATH 101**

MATH 201. Calculus and Analytic Geometry - 3 cr.

This course prompts students' understanding in calculus and analytic geometry. Topics covered include: integration techniques, infinite sequences and series, limits of sequences of numbers, bounded sequences, integral test for series, comparison tests, ratio and root tests, and polar functions. The course also stresses functions of several variables, partial derivatives, cylindrical and spherical coordinates, multiple integrals, and integration in vector fields.

MATH 200. Mathematics for Social Sciences (Business Math) - 3 cr.

This course prompts students' general calculus understanding and algebraic thinking through content enriched with real-life applications specific to students' majors (e.g. business context for business students enrolled in this course). This course covers polynomials, factoring, first- and second-degree equations, inequalities, absolute value, polynomial functions, exponential and logarithmic functions, families of functions (e.g. step functions), and differentiation. It also includes matrix operations, inverses, determinants, set operations, permutations, combinations, probability, rate of change, and techniques of integration.

MATH 210. Linear Algebra - 3 cr.

This course is an introduction to linear algebra, stressing both theory and applications. The course covers a variety of topics such as vector spaces, linear transformations and their matrix representation, linear independence, bases and dimension, systems of linear equations, orthogonal projection, least-squares approximation, orthonormal bases, matrices, determinants, and applications.

MATH 211. Discrete Structures - 3 cr.

This course emphasizes the applications of discrete mathematics to computer science. It covers logical connectives, truth tables and switching circuits, normal forms, sets, relations and functions, mathematical induction, counting arguments, permutations and combinations, binomial coefficients, analysis of algorithms, complexity, graphs and trees.

MATH 212. Differential Equations - 3 cr.

This course covers surface integrals, Stokes theorem, divergence theorem, first-order differential equations, linear differential equations of second and higher order, homogenous and non-homogenous equations with constant coefficients, power series solutions of differential equations and solutions, Bessel functions and Laplace transforms. **Prerequisite: MATH 201**

MATH 213. Numerical Methods - 3 cr.

This course offers an advanced introduction to numerical linear algebra. Topics covered include: Elementary numerical analysis: roots of equations, systems of linear algebraic equations curve fitting, integration, and solution of ordinary differential equations. Numerical techniques are presented in the context of engineering applications, and example problems are solved using a variety of computer-based tools (structure programming, spreadsheet, a computational/symbolic processing software packages). **Prerequisite: MATH 201**

MATH 219. Visual Math & Geometry I - 3 cr.

In this three credit course the students are introduced to the type of (visual) math that is most relevant to students of architecture and design. It includes proportions, ratios, composition, symmetry and geometry which ranges and progresses in complexity from plane geometry to solid and space geometry, and then to descriptive geometry before they are introduced to the most relevant of non-Euclidian and advanced geometries.

STAT 201. Statistics - 3 cr.

This course promotes students' statistical literacy and reasoning as it draws on the four main areas 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.

4. Department of Social Sciences

- **Other Social Sciences**

The General Education Courses in the Department of Social Sciences have the following objectives:

- Meet the university requirements in social sciences by offering a host of courses in selected disciplines of social sciences notably civilizations
- Offer courses that are required for some majors in the College of Arts and Sciences
- Cultivate students' interdisciplinary perspectives and prepare them for a lifetime of critical inquiry within a liberal arts education framework
- Promote students' skills in oral and written communication, collaboration, critical thinking, and problem solving.

Course Descriptions

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**

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.**

ECON 202. Principles of Macroeconomics - 3 cr.

This course provides an overview of macroeconomic issues, with emphasis on the determination of the aggregate level of economic activity, economic growth, employment, unemployment, interest rate, inflation and monetary and fiscal policies. The course introduces basic models of macroeconomics and illustrates different economic measures, fluctuations and growth. Topics include: supply and demand analysis, production possibilities, gross domestic product, business cycles, unemployment and economic growth, price level and inflation, aggregate demand and supply, function of money, banking system, FED system, foreign exchange, stabilization, international trade etc.

PSYC 201. Introduction to Psychology - 3 cr.

This course introduces students to the fundamental concepts, theories, and research methods of modern psychology, beginning with a short overview of the development of the field. Major topics of psychological inquiry are covered: human development, consciousness, learning, and psychological disorders. **Concurrent prerequisite: ENGL 201**

PSYC 202. Spiritual Psychology- 3 cr.

This course introduces spiritual psychology as an effective mean to express an individual's being in a fuller and deeper manner. The course also elaborates on the phenomena of spiritual awakening, where individuals become more and more aware of their nature as loving beings. In this course, students learn and implement the practical skills of spiritual psychology, healing the "unresolved issues" and naturally growing towards authentic success and fulfillment in their personal and professional life. **Concurrent prerequisite: ENGL 201**

PSYC 203. Psychological Anthropology- 3 cr.

This course introduces students to some psychological topics using anthropological concepts and methods. Topics covered include: personal identity, culture and personality, and human cognition in cultural and cross-cultural contexts. **Concurrent prerequisite: ENGL 201**

SOCL 101. Introduction to Sociology I- 3 cr.

This freshman course introduces students to basic theories, concepts, empirical concerns and analytical approaches of the discipline of sociology. The course covers basic classical and contemporary views of modern society, with a focus on the nature of community and inequality in modern societies (class, race and gender).

SOCL 201. Introduction to Sociology - 3 cr.

This course introduces students to sociology as the study of human behavior. It explores the basic sociological concepts and theories, social groups, and critical social institutions. The course also examines the relationship between structure and change in society. Students are required to relate some of the concepts they learn with their everyday life experiences. **Prerequisite: ENGL 201**

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**