

Barcenas, Arantxa

Last, First Middle

TRANSFER CREDIT:

art	End	Credits	Title
7/2020	06/2023	51	Bellevue College
7/2020	06/2023	14	Bellevue College

EVERGREEN UNDERGRADUATE CREDIT:

Start	End	Credits	Title
09/2023	06/2024	48	Integrated Natural Sciences 18 - General Biology I, II and III with Laboratory 18 - General Chemistry I, II and III with Laboratory 8 - Precalculus I and II

4 - Introductory Statistics

Cumulative

113 Total Undergraduate Credits Earned

A00430200

Student ID



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September 2023 - June 2024: Integrated Natural Sciences

48 Credits

DESCRIPTION:

Faculty: Vauhn Foster-Grahler, M.Sc., M.Ed., Lydia McKinstry, Ph.D., and Nancy C. Murray, Ph.D.

Integrated Natural Science is a full-year interdisciplinary science program that includes general biology, general chemistry, pre-calculus, and statistics. The following description is for the fall, winter, and spring quarters. Although each subject is listed separately, the material was delivered in an integrated manner, approaching many concepts from biological, mathematical, and chemical perspectives. Students could choose to enroll in all or various combinations of the subject areas. Students were assessed on the completion of homework assignments, the quality of laboratory notebooks and formal reports, and performance on quizzes and examinations.

General Biology I, II and III with Laboratory – Using the text *Biological Science*, 7th ed., by Freeman, students studied the basic tenets of evolution, mitosis and meiosis, Mendelian genetics, DNA replication, transcriptional regulation (prokaryotic and eukaryotic), translation, and biological molecules, cellular respiration, photosynthesis, cell cycle regulation, developmental biology, plant and animal sensory systems, and ecology. In the lab, students acquired bench skills in data collection and analysis, aseptic technique, bacterial growth and antibiotics, polymerase chain reaction (PCR) and restriction digest, enzyme regulation, differential centrifugation, plant growth, meiofauna exploration (tardigrades), taxonomy and sampling with transects. Students were assessed based on their performance on weekly quizzes and homework assignments, workshop sessions and laboratory notebook and reports.

General Chemistry I, II and III with Laboratory – The following fundamental principles of chemistry were presented: measurement and dimensional analysis; the definition and characterization of matter; chemical formulas and inorganic nomenclature; stoichiometry and the mole; aqueous solutions, aqueous acid-base reactions, and solution stoichiometry; atomic structure, electron configuration and periodic properties of the elements. Principles of chemical bonding including Lewis structures and molecular shape were also introduced, as well as gas laws and the relationship between structure and physical states of matter. More detailed quantitative topics included thermochemistry; chemical kinetics; chemical and acid-base equilibria including buffers; thermodynamics; redox reactions and electrochemistry. The laboratory introduced students to qualitative and quantitative bench techniques involving aqueous solution chemistry. Experiments included dilutions and standard curves; complexometric, acid-base, and redox titrations; buffers; calorimetry; kinetics and determination of activation energy; and free energy changes for solubility equilibria.

Textbook for General Chemistry: T. E. Brown, H. E. LeMay, B. E. Bursten, C. J. Murphy, P. M. Woodward, and M. W. Stoltzfus *Chemistry: The Central Science* 14th ed.

Precalculus I and II – The text was *Functions Modeling Change*: A *Preparation for Calculus, 5th Ed.* Connally, Hughes-Hallett, Gleason, et al. Chapters 1-8, 10 and parts of chapters 11 and 12.

Precalculus I and II was a problem-solving-based overview of functions that model change. Students participated in regular in-class group work and were assessed through multiple modalities including, daily homework, multiple take-home quizzes, and in-class, resource-limited exams. Content included procedures and applications of functions and functional notation, linear, exponential, logarithmic, sinusoidal, polynomial, and rational functions. In addition, students studied trigonometric identities and developed and interpreted models using right and non-right triangles and 2-dimensional vectors. Students represented and worked with the content algebraically, numerically, graphically, and verbally. There was an emphasis on context-based problem solving, developing and interpreting mathematical models, and collaborative learning. In addition to the content of the course, the students were assessed



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and self-assessed on the following process outcomes: use of correct mathematical notation and procedures, development and interpretation of mathematical models, appropriate use of technology, demonstrating an understanding of and linking multiple representations of functions, use of critical thinking and communicating mathematics effectively.

Introductory Statistics – The reader for statistics was a compilation of chapters from the following textbooks: *Elementary Statistics*, 10th Ed., by Mario Triola, Pearson, *Statistical Reasoning for Everyday Life*, 2nd Ed, Bennett, Briggs, and Triola, and *For all Practical Purposes, Mathematical Literacy in Today's World*, 5th Ed, COMAP. This portion of INS was an introduction to the analysis of data using descriptive statistics, probability, and inferential statistics. Topics included sampling and data collection methods, percent, percentile, and percent change; measures of central tendency and variation; graphical representation of data; probability; normal distribution; hypothesis tests of one and two parameters using Student-t and chi-square distributions; linear correlation and regression. In addition, students learned, and applied, information to Chemistry and Biology labs and Excel techniques for much of the above content.

EVALUATION:

Written by: Vauhn Foster-Grahler, M.Sc. M.Ed., Lydia McKinstry, Ph.D., Nancy C. Murray, Ph.D.

Arantxa enrolled in all components of Integrated Natural Sciences for the full year. Arantxa's engagement in the program was excellent as evidenced by consistent attendance and participation. Arantxa was committed to doing well and learning the concepts and methods introduced. Throughout the year, Arantxa synthesized learning with completed homework assignments, quizzes, examinations, laboratory notebooks and formal laboratory reports. Arantxa has successfully gained foundational knowledge in lower division science.

General Biology I, II and III with Laboratory – After a full school year of academic work in biology, Arantxa's work demonstrates a very strong understanding of the materials and themes covered. This is evidenced by her strong scores on the weekly quizzes and the midterm and final exams, especially her excellent score on the final exam (98%). She turned in most of her work on time and her responses to the homework problems were detailed and complete. Arantxa worked well with her peers in solving group workshop problems. When any concept was unclear, Arantxa asked questions to clarify her understanding. In the spring, she worked well with her workshop group in completing fieldwork and sampling exercises. In the lab, Arantxa worked well with anyone she was partnered with and has developed good lab bench skills. Her lab notebook was organized and detailed. She is well prepared for more advanced work in biology.

General Chemistry I, II and III with Laboratory – Arantxa is a dedicated student who worked hard to develop an overall satisfactory understanding of the basic concepts presented in chemistry. Arantxa was well prepared for each activity but only submitted a few homework and laboratory assignments on time. Arantxa was very actively engaged throughout the year and made excellent use of workshop time, which greatly enhanced Arantxa's learning. Arantxa's responses on homework assignments, quizzes, and examinations demonstrated very good understanding of the qualitative topics of atomic structure, electron configuration and periodicity, and satisfactory understanding of the fundamental theories of chemical bonding. This work also demonstrated good to very good working knowledge of the quantitative material on stoichiometry, aqueous solution calculations, thermochemistry, chemical kinetics, and acidbase equilibrium and buffer calculations. It also demonstrated satisfactory understanding of redox chemistry and electrochemistry, as well as how thermodynamic principles connect to chemical equilibrium. Arantxa was a collaborative worker in the chemistry laboratory and developed the bench skills and techniques introduced. Arantxa was mostly prepared for lab work as evidenced by completed pre-lab assignments. Arantxa's laboratory notebook also contained a real-time record of the procedures



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and data. The laboratory reports that Arantxa submitted were good, including calculations and data analyses that demonstrated mostly good understanding of the purpose and concept of each experiment.

Precalculus I and II – Aranxta completed most precalculus homework assignments and was usually prepared for class. Aranxta completed all assessments. By the end of winter quarter, Aranxta's written assessments demonstrated proficient performance for the precalculus process outcomes for the entire course content and demonstrated excellent understanding of the concepts and procedures of precalculus I and II. Aranxta is prepared for differential calculus.

Introductory Statistics – Arantxa was an active participant in statistics and often contributed to group and class discussions. Arantxa was fully engaged and usually prepared for class. Arantxa completed most of the homework assignments. Arantxa's quizzes and exams consistently demonstrated excellent understanding of the course content. Arantxa successfully completed Excel workshops related to statistics content and applied these to biology and chemistry labs.

SUGGESTED COURSE EQUIVALENCIES (in quarter hours) TOTAL: 48

- 18 General Biology I, II and III with Laboratory
- 18 General Chemistry I, II and III with Laboratory
- 8 Precalculus I and II
- 4 Introductory Statistics

EVER GREEN

The Evergreen State College • Olympia, WA 98505 • www.evergreen.edu

EVERGREEN TRANSCRIPT GUIDE

Accreditation: The Evergreen State College is fully accredited by the Northwest Commission on Colleges and Universities.

Degrees Awarded: The Evergreen State College awards the following degrees: Bachelor of Arts, Bachelor of Science, Master of Environmental Studies, Master of Public Administration and Master In Teaching. Degree awards are listed on the Record of Academic Achievement.

Educational Philosophy:

Our curriculum places high value on these modes of learning and teaching objectives:

- Interdisciplinary Learning
- Collaborative Learning
- Learning Across Significant Differences
- Personal Engagement
- Linking Theory with Practical Applications

Our expectations of Evergreen Graduates are that during their time at Evergreen they will:

- Articulate and assume responsibility for their own work
- Participate collaboratively and responsibly in our diverse society
- Communicate creatively and effectively
- Demonstrate integrative, independent, critical thinking
- Apply qualitative, quantitative and creative modes of inquiry appropriately to practical and theoretical problems across disciplines, and,
- As a culmination of their education, demonstrate depth, breadth and synthesis of learning and the ability to reflect on the personal and social significance of that learning.

Our students have the opportunity to participate in frequent, mutual evaluation of academic programs, faculty and students. In collaboration with faculty and advisors, students develop individual academic concentrations.

Academic Program

Modes of Learning: Evergreen's curriculum is primarily team-taught and interdisciplinary. Students may choose from among several modes of study:

- Programs: Faculty members from different disciplines work together with students on a unifying question or theme. Programs may be up to three quarters long.
 Individual Learning Contract: Working closely with a faculty member, a student may design a one-quarter-long, full-time or part-time research or creative project. The contract document outlines both the activities of the contract and the criteria for evaluation. Most students are at upper division standing.
- Internship Learning Contract: Internships provide opportunities for students to link theory and practice in areas related to their interests. These full- or part-time opportunities involve close supervision by a field supervisor and a faculty sponsor.
- Courses: Courses are 2-6 credit offerings centered on a specific theme or discipline.

The numerical and alpha characters listed as Course Reference Numbers designate modes of learning and are in a random order.

Evaluation and Credit Award:

Our transcript consists of narrative evaluations. Narrative evaluations tell a rich and detailed story of the multiple facets involved in a student's academic work. A close reading of the narratives and attention to the course equivalencies will provide extensive information about student's abilities and experiences. Students are not awarded credit for work considered not passing. Evergreen will not translate our narrative transcript into letter or numeric grades.

Transcript Structure and Contents: The Record of Academic Achievement summarizes credit awarded, expressed in quarter credit hours. Transcript materials are presented in inverse chronological order so that the most recent evaluation(s) appears first.

Credit is recorded by:

Quarter Credit Hours:	Fall 1979 to present
Evergreen Units:	1 Evergreen Unit (1971 through Summer 1973) equals 5 quarter credit hours
	1 Evergreen Unit (Fall 1973 through Summer 1979) equals 4 guarter credit hou

Each academic entry in the transcript is accompanied by (unless noted otherwise):

- The Program Description, Individual Contract or Internship Contract which explains learning objectives, activities and content of the program, course or contract.
- The Faculty Evaluation of Student Achievement provides information on specific work the student completed and about how well the student performed in the program
 or contract.

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- The Student's Own Evaluation of Personal Achievement is a reflective document written by the student evaluating his or her learning experiences. Students are encouraged but not required to include these documents in their official transcript, unless specified by faculty.
- The Student's Summative Self Evaluation is an optional evaluation summarizing a student's education and may be included as a separate document or as a part of the student's final self- evaluation.

Transfer credit for Evergreen programs, courses and individual study should be awarded based upon a careful review of the transcript document including the course equivalencies which are designed to make it easier for others to clearly interpret our interdisciplinary curriculum. These course equivalencies can be found at the conclusion of each of the Faculty Evaluation of Student Achievement.

The college academic calendar consists of four-eleven week quarters. Refer to the college website (www.evergreen.edu) for specific dates.

This record is authentic and official when the Record of Academic Achievement page is marked and dated with the school seal.

All information contained herein is confidential and its release is governed by the Family Educational Rights and Privacy Act of 1974 as amended.

If, after a thorough review of this transcript, you still have questions, please contact Registration and Records: (360) 867-6180.