RECORD OF ACADEMIC ACHIEVEMENT

The Evergreen State College - Olympia, Washington 98505

OFFICIAL TRANSCRIPT DOCUMENT

Stoll, Christian — A00428094

Last, First Middle — Student ID

TRANSFER CREDIT:

Start	End	Credits	Title
06/2017	06/2018	14	**Cameron University**
09/2018	06/2019	29	**Saint Martin's University**
08/2019	06/2020	30	**South Puget Sound Community College**

EVERGREEN UNDERGRADUATE CREDIT:

Start	End	Credits	Title
09/2020	06/2021	44	**Integrated Natural Sciences** *4 - General Biology: Evolution and Ecology* *5 - General Biology: Molecular and Cellular Biology* *3 - General Biology: Animal Physiology* *3 - General Biology: Biodiversity* *3 - General Biology Laboratory* *16 - General Chemistry I, II, and III with Laboratory* *4 - Statistics I* *3 - Field Techniques and Scientific Communication* *3 - Applied Math: Scientific Problem Solving Skills*
09/2021	03/2022	32	**Environmental Biology and Chemistry** **11 - Organic Chemistry I and II with Laboratory* **4 - Organic Chemistry: Instrumentation and Spectroscopy* **5 - Microbial Ecology with Laboratory* **4 - General Microbiology with Laboratory* **3 - Environmental Microbiology with Laboratory* **3 - Biogeochemistry and Bioremediation with Field Methods* **2 - Environmental Chemistry*
03/2022	06/2022	16	**Developmental Biology** **5 - Cell Biology* **5 - Molecular Biology* **4 - Developmental Biology* **2 - Molecular Developmental Biology Laboratory*
06/2022	09/2022	5	**Neurobiology** **5 - Neurobiology*

Cumulative

170 Total Undergraduate Credits Earned

Stoll, Christian — A00428094
Last, First Middle — Student ID

June 2022 - September 2022: Neurobiology

5 Credits

DESCRIPTION:
Faculty: Nancy C. Murray, Ph.D.

This neuroscience course covered cellular neurophysiology, membrane potential, action potentials, synaptic transmission, somatosensory and motor systems, olfaction, audition, vision, molecular biology of channels and receptors (focus on voltage-dependent channels and neurotransmitter receptors), learning and memory, and developmental neurobiology. Laboratory and workshop exercises included membrane physiology, olfaction, brain and eye dissection, and EMG and EEG recordings. Students used the text, *The Mind's Machine: Foundations of Brain and Behavior,* 4th ed., by Watson and Breedlove. Students were evaluated on the basis of weekly quizzes, laboratory notebooks and write-ups, and weekly problem sets. Each week, students watched asynchronous lectures and participated in a synchronous Zoom session, and conducted a laboratory exercise.

EVALUATION:
Written by: Nancy C. Murray, Ph.D.

Christian was a motivated and active learner who made good use of his time and course resources. His performance on the weekly quizzes demonstrated a good ability to address scientific questions logically, demonstrating his ability to understand complex molecular and cellular neuroscience concepts. His responses to the problem set questions similarly demonstrated a solid understanding of the material. It was apparent that Christian watched the asynchronous lectures, and he actively participated in all synchronous Zoom sessions. Overall, Christian learned a great deal in this fast-paced quarter and has earned upper-division science credit for his efforts.

SUGGESTED COURSE EQUIVALENCIES (in quarter hours) TOTAL: 5

*5 - Neurobiology

* indicates upper-division science credit

Stoll, Christian — A00428094
Last, First Middle — Student ID

March 2022 - June 2022: Developmental Biology

16 Credits

DESCRIPTION:
Faculty: Nancy C. Murray, Ph.D.

Developmental Biology was a one-quarter, interdisciplinary science program that interwove upper-division cell, molecular and developmental biology. In addition to the content, learning goals included the development of analytical and critical thinking and quantitative reasoning skills. Weekly activities included lectures, labs, and workshops. Students were required to actively contribute to the learning community and were evaluated on the bases of their performances on weekly quizzes, midterm and final exams, homework, workshops, and labs.

Molecular Cell Biology: The study of molecular and cellular biology was posited around the concept that the cell is the fundamental unit of life. Through this lens, students studied prokaryotic and eukaryotic cell structure, chromosomal organization of coding and non-coding regions, DNA mutations and repair mechanisms, protein structure and function, molecular genetic mechanisms (eukaryotic transcription and translation), biomembrane structure, membrane transport, protein trafficking, cell cycle regulation, post-transcriptional control mechanisms, molecular genetic techniques bioinformatics, and signal transduction pathways. The textbook used was *The Cell: A Molecular Approach,* by Cooper, 8th edition.

Developmental Biology: Developmental biology is the study of becoming, of change, and of the many cellular and molecular mechanisms accounting for those changes during an animal's life. Eukaryotic model organisms (yeast, *Drosophila melanogaster*, and *Xenopus laevis)* were used. Using the text, *Principles of Development,* by Wolpert, et al., 6th edition, students studied the following topics: fertilization, *Drosophila* and amphibian axis formation, neurulation, patterning of the central nervous system and brain growth, neural crest cells and axonal specificity, limb development, metamorphosis and, regeneration.

Laboratory

In the lab, students carried out experiments using *Xenopus laevis* to study axis formation and learned *in-vitro* fertilization methods. In addition, students acquired bench skills in data collection and analysis, aseptic technique, DNA isolation, polymerase chain reaction (PCR), restriction digest, CRISPR, and bioinformatics. Students were required to maintain a laboratory notebook documenting their work and analyses of their experimental results.

EVALUATION:
Written by: Nancy C. Murray, Ph.D.

Christian entered the program after completing an upper-division, two-quarter program, called Environmental Biology and Chemistry. He was very interested in the sciences and was a hard-working and persistent student. Over the quarter, Christian was challenged and worked hard to meet all of those challenges head-on.

Christian developed a fair understanding of the topics presented in both the molecular cell biology and developmental biology portions of the program. This was evidenced by his scores on the weekly quizzes, as well as the mid-term and final exams. He was a dedicated and hard-working student who regularly used all available resources to help him. When he had to miss class, Christian communicated with the faculty and made a plan to complete all assigned work. Christian's work in the lab was good and he seemed to enjoy doing bench work. At the start of the quarter, Christian's laboratory notebook was

Stoll, Christian — A00428094
Last, First Middle — Student ID

incomplete and disorganized. To his credit, he responded well to feedback and his final lab notebook was well documented and demonstrated a sustained effort to link his observations with relevant theory.

SUGGESTED COURSE EQUIVALENCIES (in quarter hours) TOTAL: 16

*5 - Cell Biology
*5 - Molecular Biology
*4 - Developmental Biology
*2 - Molecular Developmental Biology Laboratory

* indicates upper-division science credit

Stoll, Christian — A00428094
Last, First Middle — Student ID

September 2021 - March 2022: Environmental Biology and Chemistry

32 Credits

DESCRIPTION:
Faculty: Andrew D. Brabban, Ph.D. and Paula Schofield, Ph.D.

Environmental Biology and Chemistry was an interdisciplinary science program that used topics and theoretical concepts within microbiology and organic chemistry to study the natural world and human interaction with it, including anthropogenic pollution. It included upper division organic chemistry, environmental and general microbiology, environmental chemistry, and chemical instrumentation. Although each subject is listed separately, the material was delivered in an integrated manner, approaching many concepts from both biological and chemical perspectives. Each week, students spent 9 hours in lecture and small group problem solving sessions, 7 hours in the laboratory and doing some fieldwork, and 2 hours in seminar discussions. Students were evaluated on the basis of weekly homework assignments, seminar assignments, field and laboratory reports, in-person class activities, and performance on weekly on-line quizzes and regular in-person examinations. Some students elected to take components of this full time program.

Organic Chemistry I and II with Laboratory: In fall quarter, students studied the relationship between the structure and behavior of organic molecules. Specific concepts included chemical bonding, acid-base properties of organic molecules, stereochemistry, nomenclature, electron delocalization and resonance. The chemistry of alkanes, alkenes, and alkynes were examined in detail, and the fundamental mechanism of electrophilic addition was emphasized. The laboratory work introduced common techniques in synthetic organic chemistry, including reflux, extraction, recrystallization, steam and simple distillation. Analytical techniques included thin layer chromatography, melting point analysis, gas chromatography, GC-MS, and infrared spectroscopy. In winter quarter, the chemistry of alkyl halides, carboxylic acids and their derivatives, benzene and its derivatives, aldehydes and ketones, as well as free radical reactions were covered. Emphasis was placed on the mechanisms of nucleophilic substitution and elimination, electrophilic aromatic substitution, nucleophilic acyl substitution, and nucleophilic addition. Thermodynamics and kinetics were highly emphasized as fundamental and guiding principles within each topic. For the winter lab work, in addition to a Grignard synthesis and a green chemistry synthesis of adipic acid, students conducted a 5-week interdisciplinary project to characterize microorganisms in soil via phospholipid fatty acid (PLFA) analysis. Students took soil samples from the Evergreen State College Campus, extracted the phospholipids from the membranes of microorganisms, chemically derivatized them to fatty acid methyl esters (FAMEs), then used GC-MS analysis to identify biomarkers and profile microbial communities. The textbook used was *Organic Chemistry* by Paula Yurkanis Bruice (8th Ed.).

Organic Chemistry: Instrumentation and Spectroscopy: Students gained significant hands-on training through individual and group workshops on the following instruments: FT-IR spectrophotometer, Gas Chromatograph, Gas Chromatograph-Mass Spectrometer, and FT-NMR spectrometer. In addition to learning significant background theory, students learned sample preparation, operation, and analysis of spectra/data for each instrument, and used this knowledge to analyze products from synthetic labs. Students also applied these skills to elucidate the structures of a series of unknown compounds through workshops and homework assignments. In addition, students used a tailored GC-MS method for the separation and analysis of fatty acid methyl ester (FAME) biomarkers to study microbial communities in soil.

General and Environmental Microbiology with Laboratory: This component of the program began by examining the broad variety of microorganisms so far identified, ways of growing microorganisms and measuring growth, the biochemistry of these species and their varying cellular structure. It then progressed to examining the roles microorganisms play in the environment and the broad diversity of

ecosystems they occupy. Specifically, we examined microbial metabolism and biogeochemical cycling at a biochemical level, examining the many modes of aerobic and anaerobic catabolism, such as chemolithotrophy. The laboratory component was structured to teach the basic techniques of microbiology required to safely and precisely manipulate microorganisms, such as aseptic technique, making media and growing cultures. Students learned to work quantitatively with organisms carrying out MPN and dilution series to examine water samples, bacterial and phage replication. Students also used quantitative methods to examine cellular processes such as electron transport, using biochemical assays such as the Hill Reaction. The textbook used was Madigan, M., Martinko, J., Bender, K.S., Buckley, G.H., Sattley, W.M., and Stahl, D.A. *Brock's Biology of Microorganisms* 15/e. New Jersey: Pearson: Benjamin Cummings, 2017.

Microbial Ecology and Bioremediation with Laboratory and Field Methods: Students gained an understanding of the relationships between, and the role of, microorganisms in natural and polluted environments. Course material examined microbial metabolism and biogeochemical cycling, water pollution, toxicology, wastewater treatment, methods of measuring microbial numbers and microbial activity, abiotic and biotic interactions within microbial communities, and bioremediation. Remediation of both organic and inorganic chemicals using active/passive, *in situ/ex situ*, chemical/biological processes including the design and use of wetlands was covered. Lab and field work focused on developing both quantitative and qualitative methods of measuring microbial growth and pollution including DO and BOD_5 assays, MPN, viable and total cell count methods, culture enrichment, soil analysis and genetic methods such as PCR detection of microorganisms in water samples. The textbook used was Madigan, M., Martinko, J., Bender, K.S., Buckley, G.H., Sattley, W.M., and Stahl, D.A. *Brock's Biology of Microorganisms* 15/e. New Jersey: Pearson: Benjamin Cummings, 2017.

Environmental Chemistry: Each week students read primary literature and other texts, and completed detailed homework assignments on each reading. Topics covered included green chemistry, energy use in the USA, biofuels from algae, contaminants of emerging concern, environmental hydrocarbon degradation, and the anthropogenic carbon cycle. Readings were mostly taken from primary literature: *Journal of the American Chemical Society, Bioresource Technology, Chemosphere, Environmental Pollution*; and also other texts: *US Energy Information Administration (EIA) Annual Outlook 2021; epa.gov*.

EVALUATION:
Written by: Andrew D. Brabban, Ph.D. and Paula Schofield, Ph.D.

Christian entered this program to learn advanced concepts, as well as lab and field techniques within biology and chemistry to prepare for a future career in science teaching.

Coursework:
In the organic chemistry component of the program, Christian submitted assigned work and completed all of the online and in-person quizzes and exams. Christian struggled with some of the material; however, his understanding improved over the course of the two quarters. Overall, Christian demonstrated a fair grasp of the fundamentals of organic chemistry, specifically, nomenclature, structure-property relationships, stereochemistry, and thermodynamic principles governing molecular structure and reactions. In addition, he showed an adequate understanding of organic reactions, mechanisms, and multi-step synthetic sequences.

Christian has demonstrated a fair understanding of both general and environmental microbiology in his examinations this quarter. He was able to solve the required qualitative and quantitative problems, including growth, cell quantification and cell morphology and structure. In the environmental component, Christian showed a fair understanding of the environmental processes examined in the program, and solved some of the quantitative redox and thermodynamic problems as they relate to the environment.

Stoll, Christian — A00428094
Last, First Middle — Student ID

Christian completed all of the online homework, which were fair and all of the online quizzes, which were always good.

Christian came to seminar discussions prepared, completing detailed assignments on the readings. His work showed he had a solid understanding of the topics and had read the texts. In addition, Christian was an engaged member of seminar discussions, contributing to the dialogue.

Laboratory and Field Work:
Christian successfully worked with a variety of lab partners, and overall he learned the basic laboratory bench skills and techniques in organic chemistry and microbiology.

Christian worked very well with his group members on all aspects of the interdisciplinary field assessment and lab projects. These included an in-depth study (discharge, dissolved oxygen, conductivity, pH, temperature) of McLane Creek, a rural salmon spawning creek that drains into Eld Inlet of Puget Sound; a BOD5 study of the college campus natural waters; and the examination of ground water flow in reference to petrochemical pollution. Christian's data collection was efficient and thorough, and overall, his group's project reports were organized, included site descriptions, the appropriate calculations, tables, and figures. Overall, the two larger group reports on McLane Creek and BOD5 were very good and good respectively. Christian also contributed significantly to the 5-week group project on the characterization of soil microbial communities via phospholipid fatty acid/FAME analysis. Christian's group obtained and characterized some FAMEs as microbial biomarkers. Following feedback on a draft report, Christian's group submitted a good final extensive lab report of this work. It lacked some detail in sections, but was organized and contained very good site analyses and data presentation.

Chemical Instrumentation and Spectroscopy:
Christian learned the theory and practical application of chemical instrumentation typically used in organic chemistry. Specifically, he learned how to prepare samples, operate, and analyze data from the FT-IR, GC, and GC-MS instruments, and he used these to analyze products from organic syntheses. In addition, Christian and his project group successfully used a tailored GC-MS method for the separation and analysis of FAME biomarkers to study microbial communities in soil.

Christian learned the theory of FT-NMR and successfully analyzed spectra, as evidenced by homework and quiz scores. He also took two hands-on FT-NMR instrumentation training workshops.

SUGGESTED COURSE EQUIVALENCIES (in quarter hours) TOTAL: 32

*11 - Organic Chemistry I and II with Laboratory
*4 - Organic Chemistry: Instrumentation and Spectroscopy
*5 - Microbial Ecology with Laboratory
*4 - General Microbiology with Laboratory
*3 - Environmental Microbiology with Laboratory
*3 - Biogeochemistry and Bioremediation with Field Methods
*2 - Environmental Chemistry

* indicates upper-division science credit

Stoll, Christian — A00428094
Last, First Middle — Student ID

September 2020 - June 2021: Integrated Natural Sciences

44 Credits

DESCRIPTION:
Faculty: Clarissa Dirks, Ph.D., Carri J. LeRoy, Ph.D., Lydia McKinstry, Ph.D.

Integrated Natural Sciences covered topics in general biology, general chemistry, statistics, and applied math. Students could choose to enroll in all or various combinations of the subject areas. Program work focused on the intersection of these disciplines to develop students' interdisciplinary understanding of the interactions of matter and energy in the natural world, and to develop problem-solving skills directed at understanding natural phenomena. Students used scientific process and reasoning skills and were expected to gain field research experience in designing experiments and analyzing data. Depending on the subject area, evaluations of student achievement were based on: weekly on-line quizzes, on-line examinations, weekly homework assignments, discussion boards, final and practical exams, formal laboratory reports, and engagement and collaborative participation in all program activities.

General Biology: Evolution and Ecology – Lectures and workshops focused on introducing students to the following areas of general biology: chemical evolution, mitosis and meiosis, Mendelian genetics, evolutionary processes, population genetics including Hardy-Weinberg equilibrium, speciation, phylogenies, history of life, introduction to ecology and earth systems, as well as community, population and ecosystem ecology. Assessments were based on weekly homework assignments and weekly quizzes.

Textbook: S. Freeman, *Biological Science*, 6th ed.

General Biology: Molecular and Cell Biology – Lectures and workshops focused on introducing students to the following areas of general biology: structure and function of cells and biomolecules, energy and enzymes, cellular respiration, metabolism, the central dogma of how genes work, gene regulation and genomics. Assessments were based on weekly homework assignments and weekly quizzes.

Textbook: S. Freeman, *Biological Science*, 6th ed.

General Biology: Animal Physiology – Lectures and workshops focused on introducing students to the following areas of general biology: water and electrolyte balance in animals, nutrition, gas exchange, circulation, nervous systems, and reproduction and development. Assessments were based on weekly homework assignments and weekly quizzes.

Textbook: S. Freeman, *Biological Science*, 6th ed.

General Biology: Biodiversity – Lectures and workshops focused on learning about the variety of life on earth by examining bacteria, archaea, green algae and plants, protists, fungi, and animals. To complement this work, students also learned about viruses and the immune system of animals. Assessments were based on weekly homework assignments and weekly quizzes. The culminating experience was an in-depth individual research paper and a group presentation.

Textbook: S. Freeman, *Biological Science*, 6th ed.

General Biology Laboratory – Laboratory investigations were focused on basic microscopy using both dissecting and compound microscopes, observational studies, making solutions and media, microbiology techniques such as working with bacteria, plant dissection and analyses, as well as DNA extraction,

PCR, restriction digestion and gel electrophoresis. In-person labs gave students hands-on skills while learning theory. Remote laboratory exercises focused on the theory of the techniques used and reading of primary literature papers associated with the skills.

General Chemistry I, II, and III with Laboratory – The following fundamental principles of chemistry were presented: the definition and characterization of matter and inorganic nomenclature; stoichiometry and the mole; atomic structure, electron configuration and periodic properties of the elements and trends. 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. In the chemistry laboratory students were introduced to basic chemistry experiments, as well as qualitative and quantitative techniques involving aqueous solution chemistry. Experiments included acid-base titrations; redox titration; kinetics and determination of activation energy; free energy and solubility equilibria; and testing of buffer capacity. Evaluations were based on participation, engagement, and weekly assessments including homework assignments, on-line examinations and quizzes, post-lab homework assignments, and formal laboratory reports.

Textbook: 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.

Statistics I – Concepts in Statistics I and hands-on activities allowed students to practice using statistical methods with real-world data. Topics included probability, variable types, basic summary statistics (mean, median, mode, variance, standard deviation, standard error), and parametric statistical methods: Students t-tests, Chi-square tests, Least Squares Regression, and Correlation. Students learned to use formulae and macros in Excel. Students learned to analyze raw data, interpret statistical results, and create professional quality figures to display scientific results. Students had biweekly quizzes on statistical concepts to test their own knowledge progression. Students engaged in weekly discussion boards while working on statistics labs to problem-solve issues with data analysis, software, and the interpretation of statistical findings. They completed a final practical exercise where they selected the appropriate statistical tests to analyze data collected through field research projects. They needed to collect and organize data, run hypothesis tests, interpret results, and create figures.

Field Techniques and Scientific Communication – Field exercises were intended to deepen the understanding of concepts covered in biology and statistics lectures/assignments. This area focused on data collection using field techniques such as plant identification, snail surveys, and quadrat plot sampling. The focus was on building students' understanding of the process of science with a particular emphasis on experimental design, data collection, statistical analysis, and scientific communication. Mid-to-late fall quarter, students read and answered questions about three primary literature papers, and worked in groups to design small field projects. As a small group, they collected and analyzed field data, wrote up their findings in a short paper, and presented their work to the class in a formal presentation. Mid-to-late winter quarter, students read and answered questions about two primary literature papers and a research talk presented to the class.

Applied Math – Assignments included problem sets on algebra practice, including logarithms and exponents, dimensional analysis, making solutions and dilutions, spatial reasoning, graphing and experimental design. Evaluations were based on participation and weekly completion of the work.

Foundations of College Success – First-Year students' academic skill development was supported by their participation in Foundations of College Success, a module of instruction and community-building activities where students were introduced to college support services and practices, wellness strategies, study techniques, and metacognitive strategies to foster both personal and academic growth.

Stoll, Christian — A00428094
Last, First Middle — Student ID

EVALUATION:
Written by: Clarissa Dirks, Ph.D., Carri J. LeRoy, Ph.D., Lydia McKinstry, Ph.D.

Christian enrolled in the General Biology, General Chemistry, Statistics, Applied Math, and Field Techniques and Scientific Communication components of Integrated Natural Sciences. Christian's engagement in the program was very good as evidenced by attendance and participation. Christian was committed to doing well and learning the concepts and methods introduced. Throughout the year students synthesized their learning with many homework assignments, weekly quizzes and biweekly exams, formal reports, and by reading several primary literature papers. Christian has now gained the foundational knowledge necessary to pursue upper level work in science.

General Biology: Evolution and Ecology – Christian demonstrated an overall good comprehension of the concepts and skills presented in General Biology: Evolution and Ecology as evidenced by work in online problem-solving sessions and online weekly quizzes. Christian's performance on quizzes indicated a good understanding of the material. Christian turned in 15 of 17 homework assignments, which were well done. In general, Christian showed enthusiasm for learning biology and worked well with peers during online workshop sessions

General Biology: Molecular and Cell Biology – In General Biology: Molecular and Cell Biology, Christian demonstrated an overall fair comprehension of the concepts as evidenced by work in online problem-solving sessions and online weekly quizzes. Christian's performance on quizzes indicated a good understanding of the material. Christian turned in 10 of 15 homework assignments and could have engaged more in this area.

General Biology: Animal Physiology – Christian demonstrated an overall good comprehension of the concepts and skills presented in General Biology: Animal Physiology as evidenced by work in online problem-solving sessions and online weekly quizzes. Christian's performance on quizzes indicated a good understanding of the material. Christian turned in all but one homework assignment.

General Biology: Biodiversity – Christian demonstrated an overall good comprehension of the concepts and skills presented as evidenced by their work in online lectures and workshop sessions. Christian's performance on online quizzes indicated that they had good understanding of the material. Christian turned in 6 of 8 homework assignments. In general, Christian showed enthusiasm for learning biology and worked well with peers during online workshop sessions. At the end of the quarter, Christian showed good communication skills with an informative paper and a well-delivered presentation on sea lettuce, *Ulva Lactuca*.

General Biology Laboratory – This work was an opportunity for Christian to engage in hands-on biology to learn a variety of skills for upper division work. During lab sessions, Christian showed very good laboratory skills, was a good problem solver, and frequently asked insightful questions. Christian turned in 3 of 4 pre-lab assignments and 1 of 2 laboratory reports, so it was challenging to evaluate Christian's thinking and actions while performing experiments.

General Chemistry I, II, and III with Laboratory – Christian is a dedicated student who has developed an overall good understanding of the basic concepts and skills presented in chemistry. Christian struggled a bit with the workload in winter quarter but did submit roughly half of the homework assignments (13/21) on time and with great detail. Christian was an active learner throughout the year and made good use of workshop time, which greatly enhanced his learning. Christian's responses on homework assignments, quizzes, and examinations demonstrated good to very good working knowledge of stoichiometry and aqueous solution calculations, atomic structure and periodic trends, and the fundamental theories of chemical bonding. Christian also demonstrated good understanding of the quantitative material involving acid-base chemistry and buffers, redox chemistry, kinetics, chemical

equilibrium and thermodynamics. Christian was very engaged during the chemistry laboratory sessions and effectively developed the bench skills introduced. Christian was also well prepared for laboratory work as evidenced by completed pre-lab assignments. Christian completed all but one of the post-lab assignments. Christian's submitted laboratory reports included calculations and data analysis that were somewhat incomplete but demonstrated satisfactory understanding of the purpose and concept of each experiment.

Statistics I – Christian struggled to participate fully in the Statistics I component of this program. Christian had difficulty engaging in online discussion boards covering topics in statistics each week. The quality of the discussion posts needed improvement. Christian completed almost all weekly statistics assignments covering a variety of topics and the applications of statistics to real-world data. The work on statistics labs was variable. Statistics lab assignments demonstrated a developing understanding of probability, summary statistics, categorical data analysis, linear regression, and correlation. Lab assignments were completed in Excel and demonstrated competence with the software. Based on biweekly quizzes, Christian demonstrated competence in terms of understanding statistical concepts and the ability to think through statistical problems. A final, cumulative exam showed that Christian has understanding of statistical concepts, and is able to think critically about statistical outputs and interpretations. Christian did not complete a final statistics assignment that involved analyzing data collected for the group project.

Field Techniques and Scientific Communication – Christian demonstrated good learning and engagement in Field Techniques and Scientific Communication and turned in all but one assignment in this area. Christian participated in learning field survey techniques and seminars of primary literature about evolution and ecology. As a culminating research experience, Christian engaged in a small group study comparing native and non-native trees along an urbanization gradient. Christian's team was tasked with both writing a scientific paper and developing an oral Ignite presentation on their research. It involved considerable time outside of class as well as collaboration and organization. The group gave an excellent presentation of their work and Christian was an equal contributor.

SUGGESTED COURSE EQUIVALENCIES (in quarter hours) TOTAL: 44

4 - General Biology: Evolution and Ecology
5 - General Biology: Molecular and Cellular Biology
3 - General Biology: Animal Physiology
3 - General Biology: Biodiversity
3 - General Biology Laboratory
16 - General Chemistry I, II, and III with Laboratory
4 - Statistics I
3 - Field Techniques and Scientific Communication
3 - Applied Math: Scientific Problem Solving Skills

EVERGREEN

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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 quarter credit hours

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.
- 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.