RECORD OF ACADEMIC ACHIEVEMENT

The Evergreen State College - Olympia, Washington 98505

OFFICIAL TRANSCRIPT DOCUMENT

Glisson, David — A00426672

Last, First Middle — Student ID

DEGREES CONFERRED:

Bachelor of Arts and Bachelor of Science Awarded 10 Jun 2022

TRANSFER CREDIT:

Start	End	Credits	Title
10/1991	01/1996	62	**Community College Of The Air Force**
01/2012	03/2014	14	**Shoreline Community College**
03/2014	06/2015	18	**Edmonds Community College**
09/2015	12/2019	14	**American Military University**

EVERGREEN UNDERGRADUATE CREDIT:

Start	End	Credits	Title
03/2020	06/2020	16	**Animating the Sea: Motion, Light and Eyes** *3 - Seminar in Critical Theory of Media and Anthrozoology* *3 - Introduction to Scientific Illustration* *5 - Introduction to Nonfiction Animation* *5 - Introductory Topics in Marine Biology*
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*
06/2021	09/2021	8	**Marine Biology of the Pacific Northwest** *4 - Marine Biology* **4 - Marine Biology*
06/2021	09/2021	4	**Aquatic Toxicology** **4 - Environmental Toxicology*
06/2021	09/2021	4	**Mapping with Drones** *4 - Geographic Information Systems*
09/2021	12/2021	16	**Environmental Biology and Chemistry** **5 - Organic Chemistry I with Laboratory* **4 - General Microbiology with Laboratory* **3 - Environmental Microbiology with Laboratory* **2 - Environmental Chemistry* **2 - Chemical Instrumentation*

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EVERGREEN UNDERGRADUATE CREDIT:

Start	End	Credits	Title
01/2022	06/2022	32	**Marine Environments:Organisms and the Ocean** **10 - Biological Oceanography* **10 - Marine Biology* **4 - Laboratory and Field Work in Marine Science* **4 - Research in Marine Science* **4 - Seminar in Marine Science*

Cumulative

232 Total Undergraduate Credits Earned

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As I head toward the finish line and my final quarter at Evergreen, it is important to take stock of where I am now, and the journey I took to get here. As an adult learner, returning to college presented special challenges. Finding a schedule that allowed me to balance family, work, and school was a major concern. Fortunately, these elements aligned so that I could focus on my education full time and pursue a degree in Marine Science.

Growing up in the Pacific Northwest, I have always had a calling for outdoor adventure. Hot summer days, cold snowy winters, or just the ever-present rain in between, I love the weather here. I have spent most of my years in Washington, trying to find exciting ways to experience these environments. Rock climbing, ice climbing, mountaineering, scuba, freediving, surfing, biking, kayaking, and anything else that gave me an excuse to go outside. After years of recreation in these areas, I eventually decided to gain AMGA certification and began a career as a Mountain Guide. For the last 7 years I have been sharing my love for NW adventure with others, while providing them with a personalized experience and an added layer of safety in some of these dangerous places.

When you are working in the outdoors, year after year, you begin to see just how fragile these environments really are. From a distance, everything looks clean and beautiful. But as you get closer, you start to see the impacts people have on the world. It doesn't matter if you are deep in the North Cascades or diving in a kelp forest off the coast, you will find evidence of human impacts. And the problems we are facing with these issues, are as diverse and complicated as the environments themselves.

I knew that a foundational understanding of earth science was going to be critical for my education. I spent the next two years building a framework of understanding, from General Chemistry and Biology to upper division Organic Chemistry and Microbiology. I diversified my experiences with upper division programs including Marine Biology of the Pacific NW, Aquatic Toxicology, and my final program in Marine Environments. I also took a position as a lab aid to help further my understanding of laboratory equipment, procedures, and techniques. I have worked to understand the chemical processes that govern our planet and I have researched and presented on numerous articles from harmful algal blooms (HAB) to microbial and invertebrate symbiosis relating to the production of pharmaceuticals. Overall, I believe that my breadth of coursework has provided an excellent foundation to allow me to pursue my next path.

Graduating from college has been a long and complicated journey, but the feeling of accomplishment that I have makes even the most challenging moments worth the effort. Experiencing college through a pandemic also gave me perspective in what is important in my life. I know that working collaboratively with others is something that I highly value, and it will be important to look for this in future work. I will also strive for maintaining a strong work/life balance. If Covid taught me anything, family is precious. I look forward to my next adventure.

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January 2022 - June 2022: Marine Environments:Organisms and the Ocean

32 Credits

DESCRIPTION:
Faculty: Gerardo Chin-Leo, Ph.D. and Pauline C. Yu, Ph.D.

This two-quarter long program studied marine environments focusing on the ecology and adaptations of marine life. The material was presented through a wide range of activities that provided opportunities to learn field and lab skills and to apply learning to the design and implementation of research projects.

Lectures covered major themes in biological oceanography and marine biology such as ocean structure/ dynamics/circulation/sediments and chemistry, primary and secondary productivity, characteristics and adaptations of major groups of organisms and ecological principles (population dynamics, biogeography, trophic relationships, competition and symbiosis).The ecology of selected habitats including estuaries, rocky intertidal, coral reefs, polar regions and the deep sea was examined. Current research in microbial and larval ecology and marine mammal research were also presented. Finally, students developed an understanding of human impacts on marine environments through eutrophication, aquaculture, fisheries, invasive species and global climate change. Students were evaluated through workshop exercises, homework, quizzes, and midterm and final exams.

Laboratory and fieldwork taught various sampling procedures and analytical methods. Fieldwork included an oceanographic survey of a local estuary, a visit to a local wetland to observe shorebird migrations, and a 4-day long field trip to the Friday Harbor Labs of the University of Washington (San Juan Islands) to collect and identify marine organisms and study rocky intertidal habitats. Laboratory work included training in the use of liquid handling instruments, compound and dissecting microscopes, scanning electron microscope (SEM) as well as learning methods to measure nutrients (dissolved inorganic nitrogen) and dissolved oxygen (Winkler titration). Students completed labs with observations of live phytoplankton and zooplankton, mollusk dissections (bivalve and cephalopod) and comparative bivalve gonad histology. A quantitative methods workshop presented statistical methods (e.g., accuracy and precision, descriptive statistics, t-test, ANOVA, regression, sample size determination and Chi-Square). Data generated in lab and in the field were analyzed with these statistics using Excel spreadsheets.

In **winter quarter seminar,** students gained insights into the scientific process and how scientific results are communicated to both experts and the public. Students analyzed a wide range of scientific publications including review articles, research papers and proposals submitted to the National Science Foundation and a book on marine infectious diseases. Each student also examined how scientific information is communicated to the general public by presenting articles published in the popular literature. In **spring quarter seminar**, each student presented two primary literature scientific papers of their choice. These talks were in the style of a scientific conference presentation focusing on the results and methods of the study. Students wrote summaries of all the articles presented by the other students and also gave brief presentations of current news article relevant to program themes.

There were two **library-based research** projects where students read primary literature relevant to their project and developed scientific writing and citation skills. In the first project, students researched the ecology of a **marine organism** of their interest presenting their findings through a written report and oral presentation. The second project was a team effort to collaboratively **design a research project** be conducted in locally within one year. Each team wrote a formal proposal that included a thorough review of the literature pertinent to the research topic, formulation of research questions-hypotheses, experimental/field study design, equipment needs, and a detailed timeline. Students presented each other's proposals, evaluating their intellectual merit and ranking the proposals.

Students applied the field, laboratory and statistical methods that they learned by completing **two field research projects** each lasting 3 weeks. One project was a characterization of the infaunal and larval ecology of the Evergreen Beach, to determine the roles of beach location on bivalve diversity and abundance and to observe the variation in bivalve reproductive maturity and barnacle settlement over time. Students measured species richness and abundance in benthic transects, assessed bivalve gonad histology and measured metamorphic and settlement rates between substrates. The second project was to examine changes in phytoplankton species composition, biomass and abundance at a local estuary (Budd Inlet) and determine the environmental parameters that could explain those changes. Students measured physical and chemical parameters of the water column and collected water samples from docks and using a small boat. In the lab, they analyzed water samples for chlorophyll a, nutrients (nitrogen, phosphorus and silicate) and used light and scanning electron microscopes to identify and enumerate phytoplankton species. At the end of the quarter, students in teams selected one of the two project data sets to analyze and presented their findings in a professional conference style oral presentation. In addition, each student submitted an abstract of their team's findings to demonstrate that they understood the results of the collaborative data analysis.

TEXTBOOKS: Marine Ecology: Processes, Systems, and Impacts, Kaiser et al. Oxford University Press and Essentials of Oceanography, Trujillo and Thurman. Prentice Hall. Ocean Outbreak, Harvell. UC Press. In addition, students read numerous scientific articles from the primary literature.

EVALUATION:
Written by: Gerardo Chin-Leo, Ph.D. and Pauline C. Yu, Ph.D.

David (Daye) has met with distinction the requirements of the winter quarter of this program. Daye's attendance record was excellent throughout. Daye was an active participant in seminar and lecture discussion, and Daye's participation in program service activities was active over both quarters. Daye's engagement in learning was consistent and strong, and Daye's engagement in helping classmates with learning was likewise.

Through quizzes and exams, Daye demonstrated an overall strong understanding of the concepts in marine science throughout the program. Daye also did a good job in a portion of the winter midterm exam where students analyzed a scientific article, and demonstrated solid improvement in exam scores from the midterm to final in winter quarter. In spring, Daye completed almost all the weekly homework assignments and maintained his solid exam performance.

Daye completed all field observations assignments and demonstrated a consistently very good ability to observe and describe marine organisms through maintaining the field observations notebook. Daye thoroughly completed all laboratory and computing workshop assignments, demonstrating strong engagement with the topics of statistics, and principles in oceanography. During the field trip at Friday Harbor Labs, Daye enthusiastically participated in all the activities. Daye's engagement in exploratory observation was very good. Daye made excellent use of the facilities and organisms available, and consistently demonstrated active interest and curiosity.

In spring quarter, Daye participated in the field research activities by completing lab and field work for both the beach and phytoplankton projects. For the data analysis exercise, Daye, with 4 other students, chose to examine the phytoplankton data. Daye's team did an excellent job of analyzing the data, which included many physical, chemical, biological and meteorological measurements over various space and time scales. The team effectively identified the various hypotheses to be tested and equitably distributed the work. Their presentation of the results was excellent with an organized and clear report of salient trends and a logical discussion on the possible explanations for the observed changes in phytoplankton during the study period. Daye's contribution to the team effort was substantial focusing on the analysis of

nitrogen, temperature and weather data. Through this project, Daye demonstrated a very good ability to analyze data and to work collaboratively.

Daye completed almost all seminar assignments throughout the program. In spring quarter, Daye presented papers on the diversity of deep sea mussel-bacterial symbiosis and on the predation behavior of invasive blue crab in the Mediterranean. Daye also presented 2 brief oral presentations on science news articles and did a solid job of presenting the information and answering questions. Daye did a great job of these presentations: the slides were consistently well organized and clear with a good balance of text and images, and the speaking was comfortable and engaging. Daye clearly explained the technical information, demonstrated understanding of the content, and consistently did a solid job of answering questions. Over two quarters of seminar, Daye demonstrated strong analytical skills and the ability to effectively communicate scientific information in writing and orally.

Daye was responsible for researching, writing and presenting on the self-selected topic of bull kelp "*Nereocystis luetkeana.*" Daye's assignment completion on the interim assignments (project proposal, and rough draft) was complete. Daye's proposal demonstrated a developed understanding of information sourcing, and made strong use of primary and tertiary source material. Daye's final presentation did an excellent job of summarizing primary research and demonstrating an excellent understanding of the chosen subject matter. Similarly, Daye's final project paper did an excellent job of summarizing primary research, and demonstrating understanding of the research; the paper included appropriate use of in-text citations and included mostly proper citation formatting throughout.

In spring quarter, Daye and another student completed a second library-based project to design research. Their project was to determine the influence of nitrogen inputs from wastewater plants in an estuary on phytoplankton biomass, abundance and species composition. This team did an excellent job reviewing literature on how nutrients, specifically nitrogen, affect phytoplankton focusing on anthropogenic sources of nitrogen and how these inputs may select for harmful algal species. The proposal described various field experiments to distinguish between the impact of natural and anthropogenic sources and included a detailed methods section and timeline. Through this proposal, this team showed a very good understanding of the process of designing research including how to address time and resource constraints. Daye completed the annotated bibliography assignment associated with this project, consistently and clearly identifying the relevance of each primary source to the proposal work; however, the citation formatting was consistently incomplete for author, volume and page information. Daye received consistently high ratings for contributions to the group project on work habits, collaborative skills and leadership, and Daye's leadership was specifically noted as a strength in this project.

Overall Daye demonstrated a commitment to engaged learning, collaboration and demonstration of proficiency with a range of scientific skills. Daye is well-prepared to take on independent and group scientific work in a research setting.

SUGGESTED COURSE EQUIVALENCIES (in quarter hours) TOTAL: 32

*10 - Biological Oceanography
*10 - Marine Biology
*4 - Laboratory and Field Work in Marine Science
*4 - Research in Marine Science
*4 - Seminar in Marine Science

* indicates upper-division science credit

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September 2021 - December 2021: Environmental Biology and Chemistry

16 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 homework assignments, seminar assignments, laboratory reports, attendance and performance on weekly on-line quizzes in organic chemistry and microbiology, and five sit-down examinations.

Organic Chemistry I with Laboratory: Students studied the relationship between the structure and behavior of organic molecules. Specific concepts included: electronic structure, physical properties, chemical bonding, acid-base properties of organic molecules, stereochemistry, nomenclature of most functional groups within organic chemistry, electron delocalization and resonance. The chemistry of alkanes, alkenes, and alkynes were examined in detail, and the fundamental mechanism of electrophilic addition was emphasized. Thermodynamics and kinetics were highly emphasized as fundamental and guiding principles within each topic. 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. The textbook used was *Organic Chemistry* by Paula Yurkanis Bruice (8th Ed.).

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.

Environmental Chemistry: Each week students read primary literature and other texts, and completed detailed homework assignments on each reading. Topics covered include 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.*

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Chemical Instrumentation: Students gained significant hands-on training on the following instruments: FTIR spectrophotometer, Gas Chromatograph, and the Gas Chromatograph-Mass Spectrometer, obtaining an operator's license for each. Students learned sample preparation, operation, and analysis of data for each instrument, and used this knowledge to analyze products from synthetic labs.

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

David (Daye) 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 marine science. Daye was a dedicated student who demonstrated a genuine interest in understanding and applying the concepts presented to him. Daye's attendance was excellent and he handed in homework assignments in a timely manner. Moreover, Daye demonstrated the ability to work successfully with his peers; he was an active member of his workshop, seminar groups, and lab groups.

Daye demonstrated a good grasp of the fundamentals of organic chemistry, specifically structure-property relationships, stereochemistry and reactions. He also showed a good understanding of the thermodynamic principles governing both molecular structure and organic reactions, and the ability to use this knowledge to solve applied problems. Overall, Daye demonstrated a good grasp of both general and environmental microbiology, being able to solve all of the qualitative and quantitative problems, including growth, cell quantification, cell morphology and structure, and metabolism. In the environmental component, Daye showed he could solve all the quantitative redox and thermodynamic problems as they relate to the environment.

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

Daye performed well in labs and worked with a variety of lab partners, and overall he learned the basic laboratory bench skills and techniques in organic chemistry and microbiology. In addition, Daye learned the theory and practical application of a variety of chemical instruments. Specifically, Daye learned to how to prepare samples, operate, and analyze data from the FTIR, GC, and GC-MS instruments, and used these regularly to analyze products from organic syntheses.

SUGGESTED COURSE EQUIVALENCIES (in quarter hours) TOTAL: 16

*5 - Organic Chemistry I with Laboratory
*4 - General Microbiology with Laboratory
*3 - Environmental Microbiology with Laboratory
*2 - Environmental Chemistry
*2 - Chemical Instrumentation

* indicates upper-division science credit

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June 2021 - September 2021: Mapping with Drones

4 Credits

DESCRIPTION:
Faculty: Michael D. Ruth

The four-credit summer course “Mapping with Drones” was offered this summer to provide students with hands-on learning in the uses of small unmanned aerial vehicles (sUAV’s). Small UAV’s are known colloquially as “drones” and are increasingly used by government agencies, corporations, and NGO’s to capture high-resolution imagery of the landscape, for conservation planning purposes, environmental and infrastructure monitoring, agriculture and forestry mapping, and many other applications.

The following commercial drone instruments were available to students for use in this course:

- DJI Inspire-2
- Mavic Pro
- DJI Phantom 4 Multispectral
- DJI Mini2.

The course began with instruction on drone safety and flight protocols, with an orientation to several commonly needed types of mission plans. Each week featured a lecture on drone piloting, introducing the main topics of the FAA (Federal Aviation Administration) Part 107 requirements for a formal drone pilot certification. Other lectures provided background knowledge about photography methods, the properties of light and electromagnetic spectrum, and some essentials of geography and geodesy.

Students acquired hands-on computing skills for processing drone imagery collections, and insertion of the resulting orthographic and 3D image mosaics into a GIS (Geographic Information System) map production workflow. Students used the resulting image and elevation surface layers for spatial analysis and comparison studies.

This course relied on the software “*Drone to Map*” for management of the drone imagery collections and for processing the imagery into a GIS map layer. The *Drone to Map* software is a specialized product of the Environmental Research Institute (Esri, Inc), who provide Evergreen with the *ArcGIS* software for student use and instruction. Students also used *Adobe Creative Cloud* software to edit drone video streams and create a polished video production.

EVALUATION:
Written by: Michael D. Ruth

David was highly successful student in the *Mapping with Drones* course. David reliably attended all class meetings and submitted all of the assigned labs and GIS projects required for completion of this course.

During this course, David became proficient in the use of the Esri *Drone to Map* software. David began by flying small agile drone instruments with free-flight controls to capture simple still and video imagery. David progressed to the processing of a drone imagery collection for a typical circular inspection purpose. During subsequent labs, David developed proficiency in managing larger and more complex imagery collections. Using the *Drone to Map* software to generate orthomosaics and 3D surface models, David then applied a collection of GPS (Global Positioning system) measurement points, functioning as ground control points using a mapping process that improved the accuracy of the resulting orthoimagery products.

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David analyzed drone imagery from multiple dates, covering the Evergreen Organic Farm. By comparing drone acquisitions over multiple dates, David showed how agricultural comparison images can be published into *ArcGIS Online* viewer apps and disseminated over the web. David analyzed multispectral image collections for the investigation of vegetation status and health among plants on the Evergreen Organic Farm. Using *Drone to Map*, David explored the spectral profiles of surface reflectance from plants, soils, and other landscape surfaces, and created false color infrared images, and NDVI (Normalized Difference Vegetation Index) layers.

Unlike many other students in this course, David had no prior formal GIS coursework and initially struggled to understand some of the fundamental geographic and information technology aspects and GIS jargon related to the course of study. To David's credit, David persevered during the first few weeks of the course, acquiring knowledge and developing knowledge of many key principles of geography, and geodesy which underpin the practices and applications of drone imagery. David's questions actually improved the course for others, causing faculty to take more care to define terms and review key principles relevant to experienced GIS practitioners as well. David's success in the course was largely due to David's intensity of focus on learning, by arriving early to every class and often staying late David was able to fill in key knowledge gaps and satisfy some of his growing curiosity about the ideas and methods taught each week.

Although no formal certification was offered in this course, David is well prepared to study and take the FAA Part 107 examination, should David have this as a goal for future career development.

SUGGESTED COURSE EQUIVALENCIES (in quarter hours) TOTAL: 4

4 - Geographic Information Systems

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June 2021 - September 2021: Aquatic Toxicology

4 Credits

DESCRIPTION:
Faculty: Paula Cracknell M.E.S.

Aquatic Toxicology is a four-credit graduate level elective that is also offered to undergraduate students at the upper division science level of study. This program introduced principals of environmental and aquatic toxicology with an emphasis on water chemistry, land development and climate change and how these combined topics impact the assemblage of microorganisms in the water column.

Marine, lentic and lotic habitats were studied when harmful algal blooms are prevalent. Lectures presented the source, fate and transport of marine and freshwater toxins and the principals of water chemistry as well as human impacts on the aquatic environment, such as eutrophication. As the course progressed lectures presented the taxonomy and physiology of cyanobacteria, dinoflagellates and diatoms, along with the chemical composition and biological effects of domoic acid, microcystin toxins and anatoxin-*a* on aquatic and terrestrial organisms. Students tracked local bloom events and were introduced to epidemiological tools that are used in public health to identify whether an illness or death can be attributed to the toxins that microorganisms may produce during a bloom event.

Lab work included an interactive computer lab where students analyzed a long term data set of marine water quality parameters to understand the effects of pH, temperature, upwelling on aragonite levels along the Northwestern Pacific coast. The lab gave the students a chance to learn about natural and climate forced processes that impact water chemistry and ultimately lead to ocean acidification. The final lab write-up involved interpreting the long term data set and communicating the changes that are occurring in ocean chemistry using graphical representation of the water quality changes occurring along the coastline.

Additionally, students engaged in independent research studies using the scientific literature to develop final projects that explored topics in aquatic toxicology.

Students were evaluated through class participation including seminar, their completed lab reports, final research papers and presentations.

EVALUATION:
Written by: Paula Cracknell, M.E.S.

David was an extremely passionate student who was engaged and thorough in his studies and coursework. He contributed thoughtful responses during seminar and lecture. He was inquisitive, with a thirst to learn and contributed much to the learning community.

In the lab, David quickly grasped the importance of long term data sets to make informed decisions regarding the present and future state of water quality in the study area. He provided an excellent lab write up that proved understanding of the concepts through written and graphical responses.

David's final research project explored different methods for reducing nutrients in effluent that is disposed by wastewater treatment plants, and how limiting the concentration of nutrients in discharge can help to reduce eutrophication of aquatic systems. He produced an excellent research paper that was well written and concise. His technical writing skills were exemplary and stood out in this program.

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David's presentation of his research was informative and thorough. He took time to explain the methods and viability of each system currently available for treating wastewater, and how each system filters nutrients prior to discharge.

David was a strong researcher who paid excellent attention to detail. He is awarded full credit for his excellent work this quarter.

SUGGESTED COURSE EQUIVALENCIES (in quarter hours) TOTAL: 4

*4 - Environmental Toxicology

* indicates upper-division science credit

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June 2021 - September 2021: Marine Biology of the Pacific Northwest

8 Credits

DESCRIPTION:
Faculty: Gerardo Chin-Leo, Ph.D.

This program introduced principles of marine biology with an emphasis on understanding the marine life and habitats of the Pacific Northwest. Lectures examined the distribution, species diversity, adaptations and ecology of organisms in various benthic and pelagic habitats. Understanding the factors determining the high productivity of coastal environments was a major focus of the program. Human impacts on the marine environment, such as eutrophication, were also presented. There were synchronous remote lectures and workshops and in-person lab and field studies. Lab work included studies of plankton and invertebrates with compound and dissecting microscopes. There was also a workshop to understand the vertical and horizontal density stratification of estuaries. Day field trips studied habitats in Puget Sound such as salt marshes, estuaries and soft-bottom intertidal beaches. Students were evaluated through class participation, lab/field reports, 3 quizzes and a final exam. In addition, each student conducted library research on a marine organism that required use of the scientific primary literature. This research project was presented through an oral presentation and a written report. Textbook: Marine Biology. Castro and Huber.

EVALUATION:
Written by: Gerardo Chin-Leo, Ph.D.

David attended all activities and successfully completed the required work. As evidenced by his very good quiz scores and excellent final exam score, David demonstrated thorough understanding of the material presented in this program. His field and lab reports were also very good showing knowledge of the biology of the organisms and ecology of the habitats that he observed. David's reports were supplemented with summaries of articles from the primary literature pertinent to the lab/field activities. In addition, through these assignments, David showed a good ability to apply the material from lectures to logically interpret field and lab observations.

For his research project, David studied species of the toxic diatoms, *Pseudo-nitzschia*. In his report, David presented general information on the ecology and biology of this diatom. In addition, he summarized five studies on *Pseudo-nitzschia* published in the scientific primary literature. These summaries reflected good understanding of the technical details associated with methods and data analysis. David also did a very good job on his oral presentation of this work showing effective communication skills. Because David showed a good ability to use the scientific primary literature in his library research project and to supplement his field/lab reports, the credits associated with this work are designated as upper division science credits.

SUGGESTED COURSE EQUIVALENCIES (in quarter hours) TOTAL: 8

4 - Marine Biology
*4 - Marine Biology

* indicates upper-division science credit

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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.

Glisson, David — A00426672
Last, First Middle — Student ID

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

David (Daye) enrolled in the General Biology, General Chemistry, Statistics, Field Techniques and Scientific Communication, and Applied Math components of Integrated Natural Sciences. Daye's engagement in the program was excellent as evidenced by attendance and participation. Daye 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. Daye has now gained the foundational knowledge necessary to pursue upper level work in science.

General Biology: Evolution and Ecology – Daye demonstrated an overall excellent 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. Daye's performance on quizzes indicated an excellent understanding of the material. Daye turned in all homework assignments, which were well done. In general, Daye 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, Daye demonstrated an overall excellent comprehension of the concepts as evidenced by work in online problem-solving sessions and online weekly quizzes. Daye's performance on quizzes indicated a very good understanding of the material. Daye turned in all homework assignments.

General Biology: Animal Physiology – Daye demonstrated an overall excellent 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. Daye's performance on quizzes indicated an excellent understanding of the material. Daye turned in all homework assignments.

General Biology: Biodiversity – Daye demonstrated an overall outstanding comprehension of the concepts and skills presented as evidenced by their work in online lectures and workshop sessions. Daye's performance on online quizzes indicated that they had an excellent understanding of the material. Daye turned in all homework assignments, which were always well done. In general, Daye showed enthusiasm for learning biology and worked well with peers during online workshop sessions. At the end of the quarter, Daye showed excellent communication skills with an informative paper and a well-delivered presentation on Ebola, *Zaire ebolavirus.*

General Biology Laboratory – This work was an opportunity for Daye to engage in hands-on biology to learn a variety of skills for upper division work. During lab sessions, Daye showed excellent laboratory skills, was a good problem solver, and frequently asked insightful questions. Daye turned in all pre-lab assignments and laboratory reports showed an excellent record of thinking and actions while performing experiments.

General Chemistry I, II, and III with Laboratory – Daye is a dedicated student who worked hard to develop an overall very good to excellent understanding of the basic concepts and skills presented in chemistry. Daye was well prepared for each activity and submitted nearly all homework assignments on time and with great detail. Daye was a very active learner throughout the year and made excellent use of workshop time, which greatly enhanced his learning. In fact, Daye made outstanding contributions to the learning community; many of Daye's classmates benefitted from his collaborative strength during workshop sessions. Daye's responses on homework assignments, quizzes, and examinations demonstrated very good working knowledge of stoichiometry and aqueous solution calculations, atomic structure and periodic trends, and the fundamental theories of chemical bonding. Daye also demonstrated very good to excellent understanding of the quantitative material involving acid-base

chemistry and buffers, redox chemistry, kinetics, chemical equilibrium and thermodynamics. Daye was very engaged during the chemistry laboratory sessions and effectively developed the bench skills introduced. Daye was well prepared for laboratory work as evidenced by his completed pre-lab assignments. Daye completed all post-lab assignments and his laboratory reports included calculations and data analysis that demonstrated excellent understanding of the purpose and concept of each experiment.

Statistics I – Daye was an active participant in the Statistics I component of this program. To this end, Daye always participated fully in weekly videoconferences to build community around the study of statistics. In addition, Daye was an exceedingly active participant in online discussion boards covering topics in statistics each week. In particular, Daye used the discussion boards to help other students with the material by posting answers to problems or interesting extensions to what we were learning. The quality of the discussion posts was always high. Daye completed all weekly statistics assignments covering a variety of topics and the applications of statistics to real-world data. The work on statistics labs was consistently excellent. Statistics lab assignments demonstrated mastery of concepts in terms of probability, summary statistics, categorical data analysis, t-tests, linear regression, and correlation. Lab assignments were completed in Excel and demonstrated mastery of the software. Based on biweekly quizzes, Daye demonstrated competence in terms of understanding statistical concepts and the ability to think through statistical problems. A final, cumulative exam showed that Daye has mastered statistical concepts across the board, and is able to think critically about statistical outputs and interpretations. A final statistical experience, which involved students collecting datasets and working to analyze them through choosing appropriate tests, running tests, and interpreting their outcomes, demonstrated that Daye learned a considerable amount and is able to think through both statistical analysis and interpretation for the statistical tests covered in fall quarter.

Field Techniques and Scientific Communication – Daye demonstrated very good learning and engagement in Field Techniques and Scientific Communication and turned in all assignments in this area. Daye participated in learning field survey techniques and seminars of primary literature about evolution and ecology. As a culminating research experience, Daye engaged in a small group study of plant species richness along an elevation gradient. Daye'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 a very good presentation of their work and Daye was an equal contributor.

Applied Math – Daye was consistent in participation and collaboration in applied math workshops throughout both quarters. Daye submitted all of the problem sets to a high level of completion and demonstrated very good quantitative reasoning skills.

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

Glisson, David — A00426672
Last, First Middle — Student ID

March 2020 - June 2020: Animating the Sea: Motion, Light and Eyes

16 Credits

DESCRIPTION:
Faculty: Ruth Hayes, MFA and Pauline C. Yu, Ph.D.

Animating the Sea: Motion, Light and Eyes was a full-time program in spring 2020 that examined marine life from the perspectives of science, human-animal relationships, and the visual and media arts. Students in the program integrated their learning of animation, scientific illustration and marine biology, to research, write and represent the species they studied in their final monograph project. The program was designed for lower division students, but provided upper division science and art students ways to increase interdisciplinary breadth.

A typical week included 3 hours of lecture, 3 hours of drawing/animation workshop, 1.5-3 hours of science demonstrations, 2 hours of seminar discussion, and 3 additional hours of critique, group work and metacognitive reflection. Due to the pandemic, most content was presented in synchronous Zoom sessions, with additional lab exercises, film screenings, readings and creative assignments completed asynchronously. To that end, students drew on their own resources to set up DIY lab and studio situations at home in which to complete this work.

Faculty lectured on optics, water and wave behavior, scientific illustration in Western art history, the evolution of vision, philosophical toys, motion perception and flicker fusion, nonfiction animation, ecomedia, swimming and crawling locomotion, anthropomorphism, feeding behaviors, artists as environmental activists, bioluminescence and fluorescence, and collaborations between animators and scientists. Readings included excerpts from Helmreich's *Alien Ocean*, Cubitt's *EcoMedia*, and Raffles' *Insectopedia*, and articles spanning primary scientific literature, mainstream media and academic essays by Barad, Despret, Haraway, Minteer, Nagel, and others. Readings centered on relationships between scientific observation and artistic observation, philosophies of biology (anthrozoology, collection ethics, animal sentience, anthropomorphism), critical theory, and the anthropology of scientists. Students viewed documentaries and experimental and nonfiction animations including Lebrun's Proteus, the BBC's The Deep (Blue Planet) and shorts by Aardman, Creature Cast, Drew Christie, Juan Camilo Gonzalez, George Griffin, Jane Aaron, Jim Trainor, Lynn Tomlinson, Pareja & Chavez, Carolyn Leaf, Mirai Mizue, Winsor McCay, Samantha Moore, and Yuri Norstein and others. Students demonstrated comprehension of readings and posed questions for seminar discussion in nine written responses to readings. They wrote four learning essays to document and reflect on their integration of program content. They also wrote screening journal entries for each film viewed, developing skills in critical analysis of the films' thematic, formal and technical elements.

In the science portion of the program, students were introduced to topics in physics (ray optics and wave behavior), and in organismal biology (anatomy of vision and light sensing capacities, feeding modes and locomotion). Due to the nature of remote instruction, physics and anatomy exercises incorporated online simulations and demonstrations of different phenomena and laboratory work. Exercises in the study of animal behaviors were centered around motion analysis via observation of documentary video online (and in a few instances, of published kinematic diagrams), with an emphasis on moving and static images from biomechanics research or footage of live animals from the campus aquarium when available.

In the program's studio portion, students gained or strengthened skills in observational drawing and basic scientific illustration techniques. They practiced introductory animation skills using analog techniques captured digitally, producing two animated optical toys, a drawn metamorphosis, and two sequences of cut-out animation using replacement and articulated puppet techniques. Students applied their illustration and animation skills to representations of organisms studied in the final project, with the option to use

digital tools if they had access to them. An introduction to WordPress gave students a basic understanding of web authoring and experience in integrating illustrations and animation with the written word.

Students were assigned a final project monograph that consisted of several components with illustration, animation and a technical essay. Students were required to select one or two organisms to research using scientific literature and produce the writing in iterative assignments: a proposal with bibliography, a rough draft, a full draft and a published WordPress blog post. As part of their writing assignment, students were also assigned to speculate on the *umwelt* of their organism(s), and illustrate that idea. Their research essay was an accompaniment to their two scientific illustrations and their animation for the overall monograph assignment. Students worked in teams to identify common ecological and behavioral themes among their organisms and composed summary paragraphs on that shared theme (as "Categories" for the WordPress site). The culmination of the monograph assignment was that each student composed a blog post incorporating their writing and artwork, ultimately published as the Animating the Sea 2020 WordPress website.

EVALUATION:
Written by: Ruth Hayes, MFA and Pauline C. Yu, Ph.D.

David, who goes by Daye, took excellent advantage of the program's learning opportunities, engaging actively in both the science and art content, stretching outside his comfort zone to build skills in scientific illustration and animation, and broadening his understanding of how social pressures and biases inform and influence the study of science. New to Evergreen as a returning student, Daye adapted well to interdisciplinary studies and our practices of seminar, reflection, and integration of theory and practice. He contributed actively and productively to our learning community and met the challenges of the pandemic's enforced online learning proactively and with a positive attitude.

Daye prepared well for seminar, completing all nine seminar question paragraphs in response to the readings. These demonstrated good ability to link ideas across the texts, speculate on ways to harness them to raise the public's environmental awareness, and critique instrumentalist values of nature and non-human organisms. He contributed productively to seminar, listened actively, and frequently introduced new angles from which to think about the texts.

Daye co-facilitated our seminar on Nagel and Despret's essays about *umwelt*, helping to structure it to encourage productive discussion. He submitted all eight screening journal entries, paying good attention to content and specifics of image and sound, and gaining an understanding of animation's potential as an approach to representing nonfiction subject matter. Daye completed all four learning essays using them effectively to integrate program themes and experiences; for example, he linked Cubit's discussion in EcoMedia of *The Deep's* representations of organismsto the concept of *umwelt,* and worked to connect his program learning with current national crises.

Daye demonstrated an overall strong understanding of the presented concepts in marine science. He completed all observations assignments, and demonstrated a very good to excellent ability to observe and describe optical phenomena (simple ray optics, wave behavior), visual and perceptual phenomena (eye anatomy and motion illusions) and movement behaviors in marine organisms (locomotion and feeding behaviors) through completion of assigned notebook observations. For some exercises, he used more creative approaches to diagramming, while for others, he took extra time to do work that had potential to cause physical discomfort; he went the extra mile to challenge himself for academic investigation. Daye thoroughly completed all simulation and video observation exercises, demonstrating strong engagement with the range of materials. The majority of entries were well-annotated, and were consistently cited as assigned. Daye met the science requirements with distinction.

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Last, First Middle — Student ID

Daye was responsible for researching, writing and blogging on the self-selected topic of "Swimming Movements of the Great White Shark (*Carcharodon carcharias*)." His assignment completion on the interim assignments (project proposal and bibliography, rough draft, final draft and blog entry) was complete. The bibliography demonstrated a well-developed understanding of information sourcing, and made strong use of primary, secondary and tertiary source material. Daye's final project paper and blog entry did an excellent job of summarizing primary, secondary and tertiary sources, presenting concepts and ideas, mostly consistently using taxonomic nomenclature formatting, and consistently using proper citation formatting. Daye's research and writing were an excellent demonstration of his communication skills and ability to pair the scientific information with his informative illustration work; minor improvements would include limiting reliance on tertiary sources and greater attention to proper bibliography formatting.

Daye entered the program with basic drawing skills that he expanded by practicing scientific illustration techniques, doing very nice work in stipple and experimenting with watercolor pencil. His monograph illustration of a white shark fin showed good progress in mixing color and representing light and shadow. His creative formatting of the illustration of the shark's *umwelt* as a comic panel was both engaging and informative. Daye easily adapted his drawing skills to animation, demonstrating a strong grasp of basic principles in the two-frame exercises and putting extra effort into the metamorphosis and cut-out sequences. His well-timed metamorphosis showed invention, transforming an eyeball into an ocean swell from which a breaching whale erupts. He combined the two parts of the cut-out assignment into one, crafting an articulated seal puppet and a nudibranch replacement sequence with a beautifully animated mantle that share the same scene. Daye's monograph animation benefited from excellent attention to preproduction design, good continuity and a variety of shots that show white shark predation behavior. He combined drawn and cut-out techniques, and created several articulated puppets that are well animated. Daye's written reflections on his process and results included astute observations about how different animation formats affect the viewer's perception of motion, lessons learned, and ideas for future projects. He did excellent work in scientific illustration and nonfiction animation overall.

SUGGESTED COURSE EQUIVALENCIES (in quarter hours) TOTAL: 16

3 - Seminar in Critical Theory of Media and Anthrozoology
3 - Introduction to Scientific Illustration
5 - Introduction to Nonfiction Animation
5 - Introductory Topics in Marine Biology

EVERGREEN

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 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.