



**UPPER SCHOOL
ACADEMIC PROGRAM**
Course Catalogue

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Humanities

Departmental Philosophy

The humanities can be described as the study of how people process and document the human experience. Therefore, studying humanities benefits from the integration of many disciplines. For our purposes, these disciplines include history, language arts, sociology, psychology, philosophy, geography, and anthropology. Students explore place-based themes, classic literature, writing, and other styles of communication. The intentions are to develop deeper learning around cultural factors that shape the world around us.

Our humanities courses aim to instill open-ended learning values to teach students to comprehend, analyze, and question their experiences and research. We guide them to acquire the skills to communicate effectively and make ethical choices by providing access to myriad global literature, news, opinions, and history. Students are part of a living community to which they actively contribute through research and evidence-based writing and discussion. We want students to grow as individuals and as a community of learners who connect to the passion and versatility of their world.

Faculty Profiles

Clarcie Howell - Clarcie grew up in Colorado, where she spent most of her time outdoors, rafting and camping. She has a bachelor's degree in English Education from Colorado Mesa University and a Masters in Liberal Studies from Arizona State University. She taught secondary English and language arts in Colorado for seven years at the middle and high school levels. Meanwhile, she was a river guide on the Colorado Plateau for 12 years. After teaching for 7 years, she traveled throughout Asia on her own, then with ARCC Programs as an instructor on a gap semester. In 2018, she moved to Bend to direct international service programs for teens, but transitioned back into the classroom in 2020 to have daily interactions with students.

Jeff Wenger - After stints in Utah, Europe, Southeast Asia, and Alaska Jeff settled in Bend in the late 90s. He has been an educator in Oregon since 2001 and has taught across the curriculum in both public and private educational settings. He holds an undergraduate degree in anthropology, a highly qualified distinction in social studies, and an M.Ed. is in international school administration with a focus on experiential education and interdisciplinary strategies. He also has extensive experience in alternative school administration and chaired the local non-profit, Good Grief Guidance. Away from school, Jeff is a rock climbing guidebook author and has participated in several international expeditions as a climber and documentary filmmaker. He is married with two kids and a huge extended family in the Bend area.

Course Descriptions

9th Grade Humanities

Throughout the year, the course tackles three different topics, one per trimester

- **World Religions** - The course provides an overview of five of the world's most recognizable faiths: Hinduism, Buddhism, Islam, Judaism, and Christianity. We enrich our understanding of those faiths with a variety of coursework designed to create lasting knowledge around key figures and practices as well as address important schizims, sects, and branches inside each faith. We also uncover shared visions and similarities between faiths. To this end, we visit local religious institutions and invite guest speakers to lecture in our classroom about their faith's history, culture and modern realities.
- **World History and Contemporary World Literature** - This course addresses world history through themes revolving around our defining powers as humans. We focused less on dates and more on milestones of human history including the advent of farming, the growth of cities, nations and empires, the rise of trade networks, cultural collisions, imperialism, disease and more. We ask ourselves how human actions have been shaped by the natural world and study the ways people have harnessed the resources of our planet to achieve progress. As we explore human abilities to learn, innovate and adapt, we read *The Kite Runner*, by Khaled Hosseini. Hosseini's contemporary world classic tells a powerful story of friendship, betrayal, and redemption set in Afghanistan in a heartbreaking time of change. We use this work as a platform to draw connections to challenging topics facing our time and to address friendship, forgiveness, and change in our own lives.
- **World Geography and Human Migrations** - This course explores lands, features, and human patterns of movement through various lenses of economic, historical and social context. In doing so, we reflect on the conditions of a changing world. We will also study the cultural landscapes of both the places people leave and the places they settle. The course culminates into a migration of its own, journeying down to the Southwest we visit important geographical and cultural sites of the region and observe many of the areas push-pull factors surrounding migration.

10th Grade Humanities

Throughout the year, the course tackles three different topics, one per trimester

- **Modern American History and Literature - (2 Terms)** In the first two trimesters, students question and explore modern American history and literature from multiple perspectives. The fall term addresses topics from 1865-1945 and the winter term focuses on post-WWII to the present day. This course usea an inquiry-based social studies curriculum that promotes critical thinking, immersive experiences, and informed

action. A wide variety of resources are incorporated into the curriculum such as novels, non-fiction literature, feature-length films, documentaries, video series, digital news shows, and other traditional and interactive resources.

- **Issues of the Modern West** - Students investigate different issues and policies that have shaped the western region of the United States. From water rights to illegal immigration, students will research, read, debate, and form sound opinions on a variety of issues. By the end of the course, students collaborate, present, write formal and informal papers, and create maps and other material creations related to the American West. The goal of this course is to build a foundation of deeper learning around changing physical and cultural landscapes. Together we uncover a place fraught with challenges and, at the same time, rediscover a place still rich in potential, innovation, and the American dream.

11th Grade Humanities

Throughout the year, the course tackles three different topics, one per trimester

- **Global Issues** - This is a survey of contemporary global issues and literature. The often heartbreaking themes we cover ask us to evaluate the importance of our own humanity, and our responsibility to share in a collective memory through our interpretation of historical events and analysis of global literature. Using contemporary humanitarian issues as a catalyst, we consider the ethical, moral, economic, and political implications of myriad global issues, and read literature that helps us understand the ways in which humans find ways to keep moving forward.
- **European Studies** - Through a focus on various classic literary genres and specific historical events, we explore Europe from the middle ages through the twentieth century. Each week, we'll dissect an historical event to uncover its influence in the Western World. As we make our way through Europe's storied history, we also read, annotate, and analyze a selection of its paradigmatic literature, pulling novels and poems apart to analyze the elements of literature that bring them to life.
- **Early American History and Literature** - In this term we explore early American history and literature from about 1600-1877. We define what it means to be American from the perspectives of many groups of people who first inhabited and formed societies and laws on the continent, including Native Americans, Puritans, merchants, and slaves. As we discover the ways American politics were formed, we also consider our own societal philosophies and use them to evaluate our government. We empathize with early Americans as they formed a new nation, fought for what they believed was right, and reformed after civil war nearly destroyed them. We also mimic Early American rhetoric in persuasive arguments and formal debates. Through literature, we consider early themes of Americanism, and test their application in our contemporary society.

12th Grade Humanities

Throughout the year, the course tackles three different topics, one per trimester

- **Environmental Humanities** - This term is an introduction to Environmental Humanities, a growing field of thought that has roots as far back as the agricultural revolution, and major implications in our most urgent modern dilemmas. While students study Environmental Science elsewhere, in this class we evaluate how humans have interacted with their environment throughout history, explore literature and literary periods that focus on the environment, and consider the ways in which politics, ethics, human needs, and human economies interact and/or interfere with the environment.
- **Philosophy and the Classics** - In this survey course, we focus on the most influential classics in literature, as well as on western and eastern philosophers who have most influenced classical thought. As we read *The Odyssey*, *Oedipus*, *The Inferno*, and more, we break down the most basic human conditions and consider the ways humans first used epic, theater, scripture, and poetry to relate, learn, grieve, wage war, share pride, and connect. We recognize allusions we know and find the source — the siren's song, the garden of eden, the irony of *Oedipus* — while deciphering the written text for ourselves. Once a week, we unpack complex philosophies from Aristotle to Descartes and consider our own understanding of the world around us. In response to classical thought, we practice writing short essays that answer a prompt, and work toward timely concision.
- **Latin American Studies** - Building on the reading, writing, communicating, and researching skills students learn all year, this final unit culminates in a vibrant part of the world, as rich in culture, literature, and history, as it is steeped with political disruption. Most Latin American countries are still struggling to find their footing, and we take an in-depth look at the complexities of the region, and then make it personal by asking, how does one find their own identity in such tumult? We'll research histories and policies, read rich literature and watch colorful films, discuss current events, write to understand, and get to know Latin Americans for ourselves.

Sciences

Departmental Philosophy

Cascades Academy science courses are anchored by experiential learning opportunities where students learn by doing and are challenged to think critically as they develop scientific arguments supported by quantitative and qualitative data. Our courses are designed to expand and deepen a student's scientific knowledge while engaging them in mastering the fundamental aspects of the scientific process. We strive to ignite a curiosity about science through a variety of class formats and instructional techniques, including laboratory investigations, research projects, demonstrations, field work, direct instruction, and group discussions.

We contextualize the cultural value of scientific knowledge so students can build connections that inspire lifelong learning by incorporating math, humanities, and real-world applications into the curriculum. Upon completion of the science sequence, students are able to use their knowledge confidently to explore their natural world and apply their understanding to explain natural phenomena. Furthermore, we aspire to arm students with the scientific literacy required to critically evaluate scientific arguments, the required depth of knowledge to make informed decisions, and the confidence to engage in discussions that impact themselves and their communities. In short, students will have the scientific foundations to make a positive impact in the world.

Faculty Profiles

Syver Pearson has been teaching mathematics and science since 2016. He began his teaching career in Idaho where he taught at a semester based independent school. He then spent a year teaching in the treasure valley before joining Cascades Academy in the Fall of 2020. He strives to bring concepts and approaches to apply content into the classroom while balancing student interest. He strives to create “aha” moments for all students and cultivate a relationship where students are seen, heard, and encouraged to push their comfort zone. In his free time, he enjoys whitewater kayaking, skiing, mountain biking, fermenting, printmaking, and playing with his dog Gilia.

Paul Snape teaches science and mathematics at Cascades Academy and also coaches the cross-country and robotics teams. In addition to over a decade of teaching and coaching in independent schools, Paul worked as an academic researcher, food chemist, and pharmaceutical chemist. He has B.A. in chemistry and a math minor from Pomona College. His favorite thing about teaching at Cascades Academy is that students are provided opportunities to learn and apply their knowledge through a wide variety of experiences. The learning that takes place during programs such as traveling school, expeditions, robotics, mock trial, the mastery project, and frequent science labs provide students with authentic and

experiential learning opportunities. It is awesome to see students fully engaged and taking control of their own learning during these programs. In his free time, Paul enjoys playing ultimate frisbee, running, board games, and experimenting in the kitchen.

Course Descriptions

Physics

Physics is the first course of the science sequence in the Upper School. Throughout the year in Physics, students work to answer the essential question of *How can we find and use patterns in nature to predict the future?*. General topics in the course include the physics of motion; forces and interactions; momentum and collisions; work and energy; waves, light & sound; electricity and magnetism; and other topics based on individual student interest. This is an inquiry-based course that engages students in the scientific process from data collection to creating and applying conceptual and mathematical models to a wide range of scientific phenomena. Using these models, students are able to explain and make sense of the physics they encounter in their lives every day!

Biology

Biology is a one-year introductory high school course. This course is designed to create a sense of awe and wonder as students learn to use scientific design to discover natural phenomena. This course engages students in critical thinking, where students will create claims, hypotheses, data, and conclusions to prove or disprove their individual or group findings. Students conduct labs, discussions, and write short papers to convey their scientific understanding. The course begins at a macro level investigation of Ecology and moves into investigating Cells, Genetics, Evolution, and Plants & Animals.

Chemistry

Chemistry is the study of the substances that make up matter and the changes that these substances undergo. In this course, students study the nature of matter on the atomic level; investigate the properties of matter; experiment with how various substances interact, combine, and change; and explore the role that chemicals and chemical processes play in our everyday lives. To provide students the opportunity to experience the concepts of chemistry in action, students spend a significant amount of time investigating real-world applications and discovering chemistry concepts in a laboratory and experiential context. Of equal importance, this time in the laboratory provides students the opportunity to apply the scientific process and develop the research and laboratory skills necessary for future scientific pursuits.

Environmental Science

Environmental Science is the study of the earth's systems, how humans change the environment, and how the environment affects humanity. The goal of this class is to provide students with the scientific principles, concepts, and methodologies required to understand the interrelationships of the natural world, to identify and analyze environmental problems both natural and human-made, to evaluate the relative risks associated with these problems, and to

examine alternative solutions for resolving and/or preventing them. This course is designed to extend students' knowledge and appreciation of environmental science through first-hand experiences and discussions. Class formats will include lectures, discussions, labs, research projects, and field trips. The course covers ecosystem dynamics, global climate change, energy resources, water, and our (*Homo sapiens*) health and future as a species.

Mathematics

Departmental Philosophy

The mathematics department at Cascades Academy believes that an understanding of mathematics is essential in our increasingly complex world. Mathematics allows students to develop into fully literate and critical world citizens, while the beauty and power of mathematics makes it a worthwhile subject to study in its own right.

We aim to teach mathematics in a way that supports students in their goals, whether it be preparing for higher education in STEM disciplines or achieving fundamental mathematical literacy. The mathematics department brings experiential learning into the math classroom by providing opportunities and experiences for students to wrestle with and discover mathematical ideas. While often thought of as a solitary pursuit, mathematics learning is accelerated through discussion and collaboration with peers.

Faculty Profiles

Kevin Frederick has been teaching mathematics and computer science at independent international schools since 2004. He has led the mathematics department at five different schools on three continents, and co-authored two Pearson International Baccalaureate Mathematics Applications and Interpretations textbooks, published in 2019. In his free time, Kevin loves to get outdoors to mountain bike, climb, hike, and snowboard. He enjoys supporting the Cascades Academy vision of experiential learning in the mathematics classroom and beyond.

Jan Webb has been teaching and tutoring math to middle and high school students for almost 40 years. Her goal is now, as it has always been, to have her students appreciate mathematics as a place to discover wonder and joy and not a fearful place of rigid rules and procedures. Jan does not adhere to strict teaching fads or classroom strategies with a short shelf-life. She knows that each student is different, each class is different, and each year her students will show her what they need and the best way for them to learn. Jan has a BS in mathematics and a minor in education. She holds a MALS in the humanities. She has taught in Oklahoma, New Jersey, Florida, and Oregon and has called Bend her home for the last 16 years. When she is not teaching or planning lessons or sitting outside with a book, she is camping, hiking, or admiring trees.

Syver Pearson has been teaching mathematics and science since 2016. He began his teaching career in Idaho where he taught at a semester based independent school. He then spent a year teaching in the treasure valley before joining Cascades Academy in the Fall of 2020. He strives to bring concepts and approaches to apply content into the classroom while balancing student interest. He strives to create “aha” moments for all students and cultivate a relationship where students are seen, heard, and encouraged to push their comfort zone. In

his free time, he enjoys whitewater kayaking, skiing, mountain biking, and playing with his dog Gilia.

Course Descriptions

Algebra I

In Algebra I we study linear, quadratic, radical, absolute value, and exponential functions. An emphasis is placed on solving equations, graphing using transformations, and the applications of the above functions. Additionally, we will work with function notation, systems of linear equations, exponents, polynomials, factoring, inequalities, and probability and statistics. During the course of a class a student might work independently or with a partner or in a small group, present or practice problems on the board, take notes or participate in a class discussion. No matter the topic or the mode of instruction an emphasis will be placed on thinking and problem solving. Learning how to think is really important and really hard. And it must be continuously practiced. This may make students uncomfortable, but, hopefully, no blood will be shed.

Algebra II

Algebra II is an advanced course of study of algebraic expressions and functions. We will investigate the linear system of equations in two and three variables, polynomials and their uses in modeling and predicting phenomenon, exponential and logarithmic functions and the Richter scale, rational functions, patterns including arithmetic and geometric sequences, and data analysis throughout each unit. Students will be required to complete weekly textbook problems, use graphing technology, make predictions using mathematical expressions, complete self assessments, work with their peers on in-class prompts and discussions, and more. Upon completing this class, students will be well prepared for success in their Precalculus class next year.

Geometry

Geometry is one of the oldest branches of mathematics. We study properties of space such as the distance, shape, size, and relative position of figures. Geometry is a foundational tool for reasoning about our physical world. At the same time, much of the power of geometry comes from its abstract, theoretical nature. For example, straight lines and perfect circles don't actually exist in our physical world, but they are useful ideas nonetheless! Topics covered include logical reasoning, properties of triangles and quadrilaterals, similarity, congruence, the Pythagorean Theorem, right-triangle trigonometry, volume, and surface area.

Pre-Calculus

Pre-Calculus begins with an intensive study of trigonometry, emphasizing graphing sine and cosine functions (and to a lesser extent the remaining trig functions), solving trig equations and applications. Polynomial, exponential, and logarithmic functions are covered in detail, again highlighting graphing and application. Other functions to be studied include: absolute value, radical, piece-wise, linear, quadratic, reciprocal and inverse functions.

PreCalculus covers many of the same concepts introduced in Algebra I and II, but the level of sophistication of the material and the notation is much higher. Students enrolled in this course must be prepared to work diligently on familiar and unfamiliar problems.

Calculus I

Many branches of mathematics are challenging to summarize, but calculus is easy to summarize: Calculus is the mathematics of continuous change. While the study of calculus has many elements, it can be roughly divided into two areas: differential calculus and integral calculus. In differential calculus, students use mathematical processes to determine, evaluate, and compare rates of change. Integral calculus is concerned with calculations involving the accumulation of quantities.

Calculus II

In Calculus II, we build upon the fundamental techniques in Calculus I and learn to reason with differential equations, more complex integrals, and infinite series. We will also see that by keeping a firm grasp on the theoretical basis of calculus, we can extend our techniques to parametric equations, polar coordinates, and arc lengths. Additional topics include logistic equations, hyperbolic functions, and an introduction to multivariate calculus.

Senior Applied Mathematics

Senior Applied Mathematics is a course for seniors who do not fit into the traditional math curriculum. Topics vary depending on the interest of the instructor and the students and may include but are not limited to: spherical geometry, graph theory, probability and statistics (descriptive and inferential), financial mathematics, basic economics, vectors, polyhedra, and the history of mathematics. The emphasis of the course is to explore the depth and beauty of mathematics as well as the dangers of credit card debt.

Spanish

Departmental Philosophy

We believe that knowing Spanish is valuable in today's world, and that understanding the Spanish language as well as the culture and history of Spanish speakers enables students, regardless of background, to better understand the world in which they live and the people with whom they share their communities. Therefore, we offer courses that focus on the contextualization of the language within cultural and historical frameworks. We believe that language is acquired through experience. This is enhanced by exposure to and immersion in the language through listening and reading comprehensible texts of various kinds.

Our Spanish classes use the study of the Spanish language as a vehicle to explore topics rooted in and associated with Spanish-speaking countries that have relevance and application to the lives of our students. We encourage students to draw upon their prior knowledge to make cross-curricular connections and draw comparisons between their own experiences and culture and those of the cultures being studied. Furthermore, students are provided with opportunities through their study of Spanish to enhance and advance universal skills, resulting in well-rounded, capable, and world-ready graduates. Integral to our departmental philosophy is the implications of the voices of diverse people from a variety of backgrounds, representing the full richness of geography, culture, language, experience, and giving students the opportunity to expand and challenge their own perspectives about the world in which they live.

Faculty Profiles

Hailee Newman has been teaching Spanish both privately and in public and independent schools since 2014. She has a Bachelor's degree from the University of Oregon in Human Geography and International Studies, and has lived and traveled in Spanish speaking countries during various years of her life. She is originally from Oregon and has been enjoying the central Oregon lifestyle for 11 years. In her free time, you'll find Hailee enjoying the natural world through hiking, camping, backpacking, kayaking, foraging, gardening, and anything else she can find an excuse to do outside.

Rachel Kirk has been teaching Spanish in private K-12 schools and at the college level for 25 years. She has authored several articles about applied linguistics, including in the journal *Hispania*. She has also published books about the Spanish language, culture, and teaching Spanish. In short, her professional passion is everything having to do with Spanish! She enjoys sharing the wonders of the Spanish language and Hispanic cultures with her students, instilling in them a lifelong passion and understanding. In her free time, Rachel enjoys hiking, baking, spending time with her husband and dogs, and playing the ukulele.

Course Descriptions

Spanish I

The primary objective of Spanish I is to begin to develop the four language skills, which include listening, speaking, reading, and writing in Spanish. In addition to building vocabulary, students learn grammatical structures to help describe events that occur in the present tense. By the end of Spanish I students can expect to be able to communicate with native speakers of Spanish even though they make mistakes. Among the areas about which students should be able to communicate by the end of Spanish I are classroom and school life, the weather, family, food, and more. Culturally, students become aware of similarities and differences between their own cultures and some Hispanic cultures and they gain insight into the lives of immigrants in the United States.

Spanish II

At Cascades Academy, a core goal of the Upper School is to produce students that will go on to be active, informed community members who utilize critical-thinking skills and independent thought to engage with the world around them. At the Spanish II level, students develop these skills through their study of an important contemporary topic, immigration. Students use their developing skills as Spanish-speakers to analyze music from various parts of the Spanish-speaking world in order to assess and understand the various perspectives on immigration, both legal and not legal, that are present in popular culture of the Spanish-speaking world. They engage with comprehensible written material, such as infographics and short, simple articles to demystify immigration and inform themselves about immigration policy, how it has changed over the course of our nation's history, and how it has impacted the demographics of the US over the course of the last century or so. Furthermore, they explore various migration routes and methods as well as the challenges therein. Students review various migrant stories and analyze the way that immigration policy affects each individual. Students are encouraged to reflect on the issues surrounding immigration and use what they learn to form or inform their opinions on current and future immigration policies.

Spanish III

At Cascades Academy, a core goal of the Upper School is to produce students that will go on to be active, informed community members who utilize critical-thinking skills and independent thought to engage with the world around them. At the Spanish III level, students use the foundation that they have built in previous levels to study topics with interdisciplinary implications and relevance to the modern world and students lives. A central theme in Spanish III is exploring the way colonization has shaped Latin America, and the ways that those impacts continue to ripple out into the modern world. Students study the economic and ethnic inequality that led to widespread uprisings throughout Latin America, spurring the rise of communist and socialist ideology throughout the region during the 20th century, and the subsequent embroilment of world powers engaged in ideological struggles in conflicts throughout the region. Students make connections to history and discover the ways that historical regional conflicts

impact their lives in the present day. Through the use of film, novels, articles, and music, students expand their capacity for communication and comprehension in Spanish by studying real-world topics using Spanish as a vehicle.

Spanish IV

At Cascades Academy, a core goal of the Upper School is to produce students that will go on to be active, informed community members who utilize critical-thinking skills and independent thought to engage with the world around them. At the Spanish IV level, students use the foundation that they have built in previous levels to study topics with interdisciplinary implications and relevance to the modern world and students lives. A central theme in Spanish IV is exploring the way colonization has shaped latin America, and the ways that those impacts continue to ripple out into the modern world. Students continue their study the economic and ethnic inequality that led to widespread uprisings throughout latin America, spurring the rise of communist and socialist ideaology throught the region during the 20th century, and the subsequent embriolment of world powers engaged in ideological struggles in conflicts througout the region. Students also begin the study of the ways the economic imperialism impacts modern-day Latin America and its consequences for the natural world. Students make connections to history and discover the ways that historical regional conflicts impact their lives in the present day. At the Spanish IV level students focus more exclusively on the study of authentic resources (things written, spoken, or produced with the intended audience of native speakers) in order to help students be able to communicate with and comprehend authentic speech.

Spanish V/VI

In Spanish V/VI, students review language and grammar topics from earlier years, concentrating especially on the Spanish subjunctive. In addition to honing the skills students use to express themselves in Spanish, students in Spanish V/VI gain knowledge, understanding and an appreciation of a variety of literature, authors, art, artists, cultures, and history of the Spanish-speaking world, and they reflect on the relationship of these concepts to their own world. In other words, this course pertains directly to the Spanish language and communication, knowledge of human cultures, and personal and social responsibility including intercultural knowledge and lifelong learning.