Nueva Upper School

2018

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Nueva Upper School Curriculum Overview

Core Areas of Focus		Grade 9	Grade 10	Grade 11	Grade 12
STEM: Science, Technology, Engineering & Math	Science	**Foundations of Science I: Chemistry**	**Foundations of Science II: Biology** **Interdisciplinary Studies of Science (ISOS)**	**Advanced Courses** *(e.g., Drug Design, Astronomy, Experimental Bioorganic Chemistry, Research: Applied Molecular Biology, Physics with Calculus, Modern Physics, Adv. Mechanics)* **Independent Research**	
	Technology & Engineering	**Design Thinking, Fabrication & Computer Science**	**Courses including: fabrication art, CNC machining, robotics, mobile app design, architecture, design engineering, computer science & programming**		
	Mathematics	**Integrated and advanced topics, emphasizing mathematical reasoning and intellectual risk-taking, examine foundations of computational thinking, proof & heuristics, programming, geometry, advanced algebra, probability, data analysis & statistics, calculus, and advanced topics in mathematical problem-solving. Classes are taught at "stage not age," including a three-year integrated math curriculum that covers algebraic topology, cryptography, linear algebra, mathematical modeling, single- and multivariable calculus, and calculus-based statistics.**			
Global Perspectives in Humanities & the Arts	English Language & Literature	**The Great Dialogue: Literary Foundations**	**Landscapes of Self and Others: World Literature**	**Integrated Studies in American Literature**	**Seminars and Independent Study** *(e.g., 20th Century Drama, Gender & Sexuality in America, Journalism, Shakespeare in the World, The Immortal Gothic Genre)*
	History, Social Sciences & Civics	**Global History: Ancient and Medieval Worlds**	**Europe and the World; Global History: Modern Middle East and South Asia**	**United States History**	**Seminars and Independent Study** *(e.g., Conflict in the Modern Middle East, Economic Inequality, Fundamentalisms)*
	World Languages	**Focus on oral proficiency in second languages (Mandarin, Spanish, and Japanese) in grade 9;** ASL offered as elective; Comparative Literature using original text and translations; study of additional languages in grades 10, 11, and 12.			
	Visual Arts & Performing Arts	**Performance and studio-based courses in a variety of arts (studio art, music performance, theater, photography, film, fabrication); anchored in Theory-Skills-Practice-Performance framework; during and after school.**			
Wellness, Resiliency& Applied Learning	Science of Mind	**Principles in cognitive psychology and neuroscience, using a curriculum aiming to meet the needs and concerns of high school students regarding transition and identity, life balance, personal purpose and ethical responsibility, and citizenship.**			
	Nueva Quest	**Students shape a different Nueva Quest each year or pursue one area of interest over several years. Mentors and internships support improved mastery in areas of interest.**			
	Community Engagement, Entrepreneur-ship & Nature	**School & Local Stewardship; Global History; Peru Trip**	**Environmental & Global Citizenship; Costa Rica Trip**	**Apprenticeships & Social Entrepreneurship; American Studies Trip**	**Nueva Quest Culminations; Independent Studies; Senior Trip**
	Athletics, Health & Wellness	**Robust program promoting social, emotional, and physical benefits of athletics, wellness, and healthy competition. Engagement and enjoyment of lifelong fitness as a result of participation in team and individual sports, interscholastic and club sports, and dynamic fitness classes. Activities include volleyball, cross-country, fencing, yoga, dance, squash, golf, tennis, soccer, basketball, track & field, swimming, rock-climbing, and conditioning.**			
	Activities, Advisory, Arts & College Counseling	**Student-initiated activities and clubs (e.g., Debate, Future Problem Solving, Spirit and Social Club, Interfaith Club, MUN, game design); arts with practicing artists (choir, jazz performance, and recording studio; classical and modern theater). The college counseling team provides a personalized experience to help each student find a college that best fits their learning style and will help them reach their future goals. Advisories meet biweekly, in groups of ten, to support and develop each student's academic, social, and emotional needs.**			

Core Curriculum

Grade 9 Global History: Ancient and Medieval Worlds

Overview

The history sequence at the Nueva Upper School begins with a two-semester investigation of the history of human civilization through the lenses of the social sciences. Grade 9 students explore the political philosophy, empires, and religious movements of East Asia and the Mediterranean world through primary sources. Along the way, they practice analytical writing and develop historical thinking skills that are fundamental to the rest of the courses in the social science sequence and the courses students can elect to take during their Nueva career and beyond.

Goals

Students in this course will:

- improve their historical knowledge and understanding of the civilizations of the ancient world
- sharpen their reading, speaking, and writing skills
- develop their abilities to critically evaluate and to construct arguments based on various forms of evidence
- hone their capacities for thinking about history causally and analytically
- build media literacy through developing a critical eye for reading primary sources
- advance their proficiencies in collaboration and cooperation
- practice thinking about history creatively and divergently

Materials

Students will need few materials for this course, but they will need them on a daily basis. The key materials include reading packets, which will be distributed by the teachers and will be available electronically. Additionally, students will need writing instruments and notebooks of whatever form suits them best, as well as their Nueva laptops. In many instances students will not be allowed to use their laptops for taking notes during class, and for this reason they are asked to carry separate notebooks with them each day.

Homework

Students should expect homework regularly and should make efforts to manage their time and plan ahead for major assignments. Several different types of assignments will be given. Students will be asked to do core readings on a frequent basis, and these readings will serve as the foundation for in-class activities and discussions. Students will also be asked to write formal essays and research papers, perhaps as often as several times a semester. And students will be assigned large-scale projects that will involve multiple components (presentations, written reports, and more.) Because many of these projects will be done in groups, students should be prepared to find time outside of the classroom to work with their colleagues.

Assessment

Although traditional tests and quizzes may be used to gauge students' grasp of course content, the bulk of the formally assessed work will be written. Because writing is a focus of history and the social sciences at Nueva, students' written efforts will be assessed in terms of both content and form. Although grades will be given for some but not all assignments, students should be prepared to absorb and use the feedback received from all work, graded and ungraded.

The most important major assessment will happen at the end of the academic year. Throughout the two semesters, students will use work from both semesters of this course as well as from their English course in order to build portfolios that represent their best efforts and their intellectual growth. At the end of the second semester, students will defend these portfolios in oral defenses with a committee of Nueva teachers. These oral defenses will serve as both the culmination of students' efforts across multiple disciplines and the final assessment for the course.

Grade 10 Global History: Europe and the World, 1750–1950

Overview

This course traces the emergence of the modern international system from 1500 to the end of the Cold War, beginning with the four global centers of power and wealth at the beginning of the early modern period: Europe, the Middle East, India, and China. Students will start with an investigation of the emergence of the European balance of power system and compare it to the consolidation of political power in Ming/Qing China, the Ottoman Middle East, and Mughal India, and explore the effects of the military, maritime, and commercial revolutions on modern government, international politics, and global trade and technological innovation. The first semester ends with an investigation of how 19th century revolutions and technological changes globalized great power rivalry, increased avenues for state power and wealth through industrialization and imperialism, and created new forms of mass politics, setting the world up for the great power conflicts, revolutions, and anti-colonial wars of the 20th century.

The second semester will focus on the massive transformations of the international system in the 20th century, tracing how the centuries-old multipolar world of great powers gave way to the bipolar world of the postwar U.S. and Soviet Union. Over its first two units, the semester will explore the causes and impact of the two world wars on the global system and on the emergence of new regimes and nation-states in the wake of collapsing empires and decolonization and, in its concluding unit, investigate of the challenges of regional and global conflict, state consolidation, and economic development among newly independent nation-states in the Cold War period.

Goals

Students will:

- expand their knowledge and understanding of global history
- develop their reading, speaking, and writing skills
- improve their ability to critically evaluate and construct arguments based on various forms of evidence, with an emphasis on primary sources
- deepen their ability to consider history causally, analytically, and creatively
- develop confidence participating in and leading class discussions
- build research skills leading up to and culminating in a large research project at the end of the spring semester

Materials

Key materials include texts and course readings, many of which will be available electronically. Students will use notebooks as well their Nueva laptops in class.

Homework

Students will be assigned core readings on a frequent basis, which will serve as the foundation for in-class activities and discussions. Students will write formal essays, research papers, and primary document–based analyses and will produce larger projects involving multiple components (presentations, written reports, and more). As some of these projects will be done in groups, students should be prepared to find time outside of the classroom to work with their colleagues.

Assessment

Writing well is a major goal of history and the social sciences at Nueva, and students' written efforts will be assessed in terms of both form and content. Most assignments will require students to interpret historical evidence, including both primary and secondary sources, as well as articulate and defend historical arguments. Students will also write occasional reading responses — short reflections on reading assignments written at the beginning of class or for homework.

Grade 11 American Studies: United States History

Overview

Nueva's U.S. history course (one of two classes in the American Studies program, along with American literature) aims to provide students with a comprehensive view of U.S. history, from the pre-Columbian period to the present day. In keeping with the school's commitment to interdisciplinary study, the course will emphasize the array of different frameworks used to evaluate history, familiarizing students with social and cultural, political, economic, scientific, and environmental perspectives. There will be a particularly strong connection with the English faculty, who will be focusing on American literature. The two classes will maintain varying degrees of chronological and thematic continuity and will share several readings and assignments.

The course aims to provide students who may have taken no other U.S. history class with content that balances both breadth and depth. This will be accomplished by combining chronological and thematic organization, emphasizing concurrent regional (and sometimes international) developments, and evaluating society not as a cohesive whole but as a complex structure made up of variegated, sometimes conflicting groups with their own, separate experiences. Three themes will be interwoven through the class, allowing students to find connections across social, geographic, and chronological boundaries:

- the evolution of democracy (its definition, ideals, and actual structure)
- emerging "American" identities (crossing race, class, gender, region, and national origin)
- the interrelationship between foreign and domestic spheres (emphasizing America's origins as a contested imperial domain and its rise as a global power)

Structure

The course is divided into seven units — three in the first semester and four in the second — that emphasize the three major themes:

- Making New Worlds: Encounter, Exchange, and Settlement in the Americas
- Building New Nations: Enlightenment, Transformation, and Expansion in North America
- Constructing (and Re-Constructing) a Democracy: Debates and Divisions over "Liberty" and "Equality"
- Growth of an Industrial Giant: The North, South, and West in a "Gilded Age"
- Rise (with a Few Falls) of a Global Power: Spreading, Celebrating, and Questioning American Values
- Exercising Superpower: Foreign and Domestic Struggles over American Democracy and Culture
- Negotiating Globalization: Responses and Reactions to Social and Global Transformations

Goals

The course goals include familiarity with secondary and primary sources from across multiple disciplines. Students will also be instructed to approach history not as a concrete discipline with immutable facts to memorize, but as a fluid, constantly evolving perspective on our past that shifts according to the values, views, and biases of a particular time period. By thus comprehending the contingent nature of history, students will develop the skills to critically engage with sources and historical arguments, formulate their own connections between historical events and theories about cause/effect, and construct informed arguments and debates about historical phenomena and processes. In this way they will develop their reading, research, and analytical skills as well as their oral and written expression. Finally, they will be encouraged to apply historical content and skills not only to their other classes but to their evaluation of present-day developments in both the United States and the wider world.

Above all else, students are expected to have a deep understanding of three core elements of history: First, cultural, social, and political relationships must be contextualized within time and place; second, history is "multicausal" and many different factors shape the developments and events that lead to the present; finally, interpretations of the past are contingent and never complete, and the evidence used to understand history should always be viewed critically and with a healthy heap of skepticism.

Homework, Assignments & Assessment

The course goals will be met in three ways:

1. Class content: Students will be expected to take copious notes on (and to participate frequently in) lectures, presentations, debates, and discussions.
2. Readings: These include a foundational textbook, *U.S: A Narrative History*, as well as a course reader that contains a variety of secondary and primary source excerpts. Students will also occasionally have a joint reading assigned for their U.S history and American literature classes. These readings will form the bulk of the homework, and students will be expected to keep current for class discussions, homework quizzes, and major assessments.
3. Assessments: These will range from small quizzes and papers to major tests and analytical essays. Assessments will also include various group projects, presentations, and debates, as well as a final research paper. This final paper, which will be the year's culminating piece, will include smaller assignments such as a prospectus, outline, and first draft, as well as peer reviews. Students will work on many of these assignments during our limited class time but should be prepared to devote significant outside time to their completion.

Materials & Resources

Students have one foundational text: *U.S: A Narrative History*, *Volumes 1 and 2.* The course reader will include a broad range of primary and secondary sources from across disciplines, including poems, speeches, artistic pieces, scholarly articles, scientific studies, and more.

Besides this book, students should also bring their laptops to class for days that require research, and they should have binders with lined paper as well as rings and folders for inserting documents. The binder will be useful for note-taking; for storing the various hand-outs, assignments, and excerpts provided in class; and for any materials they gather in their own research.

International Relations

Overview

Why has war been such a dominant force in human history? Is the world simply an anarchic collection of self-interested states, or does an international society exist that might one day eradicate global conflict? Why do some states fail and degenerate into ethnic and sectarian strife? Can economic integration create peace? These are some of the central questions of international relations, a subfield of political science. In this course we will study the major theories of this discipline, including key works from the realist, liberal, and constructivist schools of thought, and examine case studies from 1945 to the present day, spanning Russia, Europe, Latin America, Asia, Africa, the Middle East, and of course the United States. Major topics will include an introduction to foundational texts of realism, liberalism, and constructivism (from Thucydides and Morgenthau to Jervis and Wendt), security and cooperation, alliances and the international system, law and international institutions, the uses of force, terrorism, nuclear proliferation, international political economy and globalization, and interventionism.

Goals

Students will:

- expand their knowledge and understanding of international relations theory and practice
- develop their ability to critically evaluate and construct policy arguments based on evidence drawn from primary and secondary source research
- deepen their ability to consider international politics causally, analytically, and creatively
- develop confidence participating in and leading class discussions

- complete small policy-writing and research assignments during each semester and one large policy simulation at the end of the semester

Materials

Key materials include texts and course readings, many of which will be available electronically. Students will use notebooks as well their Nueva laptops in class.

Homework & Assessment

Students will be assigned core readings on a frequent basis, which will serve as the foundation for in-class activities and discussions. Students will write policy briefs and memos based on historical events as well as near-future, real-world scenarios and simulations, and will produce larger projects involving multiple components (presentations, written reports, and more). As some of these projects will be done in groups, students should be prepared to find time outside of the classroom to work with their colleagues.

Writing effectively is a major goal of history and the social sciences at Nueva, and students' written efforts will be assessed in terms of both form and content. Assignments will require students to interpret evidence, including both primary and secondary sources, as well as formulate and defend policy recommendations.

American Indian History and Contemporary Issues

Overview

Welcome to American Indian History and Contemporary Issues. We will utilize multiple vantage points and incorporate interdisciplinary and collaborative learning processes to discover the history of the First Peoples of what we now know as the United States. We examine the multifaceted intersections between Indian and non-native settlers, political and spiritual reactions to American expansion, framing of identities and formation of policies such as Indian Removal. We will examine current scholarly debates as well as the poignant contributions of contemporary Indian authors such as Sherman Alexie, choose from among Indian filmmakers Michelle Derosier and Chris Eyre and musicians such as Robert Mirabel. Contemporary issues such as Indian Gaming, NoDAPL protests, and implications of proposed marijuana cultivation on reservation lands are also among diverse topics for us to choose from. Participants examine areas of interest to teach their classmates; presentation is an integral component of this course. As collaborators, students take initiative and are prepared to examine unpopular or uncomfortable depictions of past events with intellectual maturity.

Goals

Students will:

- expand their knowledge and understanding of the relevant major trends/issues within American Indian history and cultures
- develop a familiarity with various aesthetic and other value systems and the ways they are communicated across time and cultures
- examine multiple perspectives about events and issues that have national and local relevance
- develop their ability to critically evaluate and construct arguments based on evidence drawn from primary and secondary source research
- deepen their ability to analyze the contemporary impacts of Indian resistance to conquest
- develop confidence participating in and leading class discussions
- complete short and longer research assignments stemming from areas of interest within the scope of the curriculum

Materials

An Indigenous Peoples' History of the United States, R. Dunbar-Ortiz
Voices in the Stones, Life Lessons from the Native Way, K. Nerburn

We will use a variety of course readings, most of which will be made available electronically. Students will use notebooks and/or their Nueva laptops in class.

Homework & Assessment

Students will be assigned core readings on a regular basis; these will serve as the foundation for in-class activities and discussions. Students will write both brief responses and longer synthesis essays based upon readings and presentations. All major presentations and written work will be assessed in terms of both form and content. Assignments will require students to interpret evidence, including both primary and secondary sources, as well as formulate and defend interpretations and potential recommendations for contemporary policy.

American Government: Grades 11 and 12

Overview

The course begins with a study of the ideas behind the Constitution and the compromises it contains. The legislative, executive, and judicial branches will be discussed in turn, with case studies of executive, legislative, and judicial action. We'll have a unit called "politics outside government" (movement studies, community organizing, et al.). This semester, we will also interrupt the main flow of government study with discussions of the election.

Goals

Students will have a working knowledge of American government — what's in the Constitution, what is not there, how Congress works, how judicial review operates. Additionally, I expect that students will get plenty of practice in "thinking outside the box" — challenging the assumptions of American government, considering and creating alternatives, understanding the political theory that underlies the practice.

Materials

Students may and should take notes on laptops or on paper, as they prefer. No textbook; readings are almost exclusively online documents, papers, and book chapters.

Homework & Assessment

Reading is assigned regularly; students should be ready to discuss that reading each day. There will be occasional traditional quizzes, announced in advance, on the particulars of the Constitution, specific court cases, and statutes. The three 750-word essays are more important. There will also be a longer paper/presentation in which students attempt to make an argument or answer a significant political question. Advance drafts and consultation with the instructor on these projects are strongly encouraged.

Students should consult with the instructor if they think they might miss a deadline. Absent illness or some true emergency, late work results in significant penalties on the "habits of learning" rubric. Rewrites or redo's may be granted in certain instances, but they are not presumptive.

The Rise of Rome

Overview

For nearly five centuries the Romans waged aggressive wars against their neighbors and enemies, slowly conquering the Mediterranean from Spain to Syria and beyond. As they transformed the world around them, however, the Romans were themselves transformed: the institutions of their treasured Republic — checks and balances, mixed government, and citizen participation — were unable to cope with explosive expansion, and eventually they unraveled. Students in this course will trace the history of the Roman Republic (ca. 500 to 30 BCE), from its beginnings as a second-rank Italian city-state to its apex as a Mediterranean superpower. Using an

interdisciplinary lens that draws on history, archaeology, and literature, students will examine the transformation of Roman society in this critical historical period. Students will also take on the roles of Roman senators in *Senatus Romanus* ("the Roman Senate simulation"), thereby learning about Roman politics through firsthand experience. Key topics include Roman imperialism, aristocratic "warrior" culture, and the political crises of the late Republic, as well as the Republic's legacy in the early United States.

Goals

This course has several primary objectives. First, it aims to provide students with the ability to interpret and synthesize multiple types of evidence, including historical documents, literary texts, and archaeological materials. Second, students in this course will understand how perspective shapes the surviving sources and the interpretations of modern historians, as well as the role that perspective plays in the construction of narratives. Third, the course will develop students' ability to do original research in primary and secondary sources; using these sources, students will ask historical questions and formulate evidence-based arguments, both orally and in writing.

Homework & Assessment

This class will include regular reading assignments, as well as occasional reading responses — short reflections on a reading assignment — that will be submitted electronically (on Canvas). Students will also be assessed for participation in class, where we will regularly discuss reading and course content. The major assessments are three short essays, each focusing on key moments and controversies in Roman history, as well as several in-class write-ups involving the close examination of interdisciplinary sources. Collectively, these assignments allow students to develop their writing and research skills, to posit historical arguments, and to support their arguments using archaeological, historical, and literary evidence.

Materials

Students will require a note-taking medium for class, either notebook and paper or their laptop. They are expected to bring their reading material to class each day, especially their primary book (see below), but also any readings posted on Canvas.

For reading material, this course draws widely from several different texts to provide students with several modern and ancient voices Students have been provided with copies of Mary Boatwright et al, A brief history of the Romans (Oxford University Press, 2013), which narrates much of the period covered by this course.

In addition to this main course text, we will also read chapters from Nathan Rosenstein, *Rome and the Mediterranean, 290 to 146 BC: The Imperial Republic* (University of Edinburgh Press, 2012); Klaus Bringmann, *A History of the Roman Republic* (Polity, 2007); Beard, *SPQR: A History of Ancient Rome* (Liveright, 2015); and a wide array of primary sources (Livy, Caesar, Plutarch, Sallust, Polybius, Appian, etc.).

Capitalism in Crisis: The Great Depression and the Origins of Modern America

Overview

The Great Depression jolted American's faith in capitalist democracy. With desperation rising at home and fascism growing abroad, Franklin Roosevelt launched an eclectic and, at times, even contradictory set of reforms with the New Deal. By the time the dust settled after thirteen years of depression and war, many of the outlines of modern American political culture had taken root. This course analyzes the controversies and challenges of the depression years, taking stock of their impact on the American state while also exploring what might have been. We will look at government-funded self-help cooperative experiments, witness the labor battles of the great uprising, chart the rise of modern conservatism, and analyze the changing contours of race and the state.

Our end goal will be to understand the relevance of the depression years for our own time, revisiting this moment of political creativity and assessing the weight of the decisions made on our own political culture.

Goals

The course aims to provide students with opportunities to conduct primary source research, analyze historiography, and assess historical memory. The course will provide students with multiple perspectives to view modern American capitalism. The course will also develop students' ability to do original research in primary and secondary sources; using these sources, students will ask historical questions and formulate evidence-based arguments, both orally and in writing. Finally, students will be asked to assess the legacy of the New Deal in American memory, understanding the ways in which history is used in contemporary debates.

Homework & Assessment

The class includes regular reading assignments with occasional in-class reading response and group activities utilizing the assigned readings. Students will also be assessed for participation in class, where we will regularly discuss reading and course content. Students will complete three core assignments. The first is a short (roughly 3 pages) paper using our readings on capitalism and sources from the depression to analyze the nature of the depression-era crisis as a function of the capitalist system. The second project, utilizing primary source research, requires students in both individual essays and group presentations to assess the efficacy of a New Deal program in the context of local implementation. Finally, students will conclude the semester with a speculative paper with space to contemplate either what might have been or to offer conclusions about how we might think of the New Deal's impact on American capitalism.

Materials

For reading material, the course will draw from a wide variety of primary and secondary sources which will be posted to canvas. Students are required to bring their reading and note-taking material to class each day.

Grade 9 English: The Great Dialogue

Overview

English 9 students study and discuss key works of Western culture — stories that explore signal values, philosophies, and aesthetics. Essential questions will include the following:

- Why do we tell stories?
- How do the stories we tell represent our identities and culture?
- What does it mean to be human?
- What does it mean to be good? To be evil?
- How do the concepts of good and evil inform our humanity?

We will first focus on foundational works that help us understand key ideas and questions in Western civilization and literature. These works include selections from Greek literature and selections from Genesis (read from a literary rather than religious perspective). We then will study how these key ideas and questions play out in texts from the Renaissance, a period of cultural rebirth. We will end fall semester with Dante's *Inferno*, a foundational Renaissance text, and we will begin spring semester with selections from Chaucer's *Canterbury Tales*. Next, we will move into a study of Shakespeare's *Othello*. Our other major text for spring will be Mary Shelley's *Frankenstein*, which will inform students' understanding of the Enlightenment and the Scientific Revolution. We will end the semester by reading short stories and poems from Latin America to prepare for the Peru trip at the end of the semester. In both semesters, students will learn to analyze literary texts and construct intellectual arguments, while developing their skills as readers, writers, collaborators, and critical thinkers.

Goals

Our goals in ninth-grade English are to build essential skills in reading, writing, critical thinking, and collaborative dialogue while expanding cultural literacy. Through encounters with a variety of literary texts, students learn:

- how to recognize formal structures and genres in literature
- how to situate texts in relation to literary traditions and/or historical contexts
- how to approach a difficult text — what strategies to use
- how to write an essay with a thesis and evidence to argue for an interpretation
- how to use writing mechanics, structure, and style to articulate ideas
- how to develop and use a writing process (prewriting, writing, and revising)
- how to use writing as a tool for thinking
- how to dialogue about ideas in a class discussion
- how to give and use feedback productively
- how to ask good questions

Homework & Assignments

Students will have reading and/or writing homework to prepare for most class meeting. Students will learn to reflect on their reading through annotations and other short writing assignments. For larger writing assignments, we will focus heavily on writing analytical essays, beginning with short essays, in order to teach the fundamentals of argumentation and organization. We will build to longer, more complex essays as the year progresses. The progression of analytical writing assignments will include helping students learn the importance of revision and iteration. At the end of the year, students will choose six writing assignments from English and history, which they will revise for a digital portfolio of their best writing. As part of the portfolio project, students will participate in an oral defense of their ideas with 2 or 3 faculty members. Throughout the semester, students will also complete projects aimed at developing their individual voice and creativity.

Assessment

Students will receive ongoing verbal and written feedback on their developing skills. For writing assignments, students will be given two forms of feedback: a comment from the instructor and a rubric that will assess the development of their writing skills. Students will also learn how to assess their own skills and progress using the rubric. For the portfolio project at the end of the year, students will receive verbal feedback in a meeting held immediately after their defense. Both students and parents will receive formal midterm and end-of-semester evaluations to help them keep track of their progress toward all course goals.

Materials

Students will need a notebook for note-taking and a durable folder or 3-ring binder to keep track of their English handouts and other materials. They are expected to bring their text (reader or book) to class every day (distributed by their teacher at the start of each unit).

Grade 10 English: Landscapes of Self and Other

Overview

In English 10, we will dive more deeply into issues raised by colonialism, post-colonialism, and globalization. We will ask essential questions, such as: How do cultural and environmental locations inform who we are and how we see others? As we encounter new landscapes, peoples, and worldviews, how do our understandings of self, other, and place transform? In the fall, we will look at how sociocultural contexts shape perspective and what happens when differing perspectives collide. We will read *A Small Place* by Jamaica Kincaid, *Heart of Darkness* by Joseph Conrad, and a variety of other essays, poems, stories, and literary criticism. In the spring, our studies of self and other will engage with topics in environmental studies, such as tourism, environmental risk, and environmental justice. Both semesters, students will read a wide variety of literary modes and genres and learn

how to analyze style, tone, rhetorical modes, and literary form. Students will write analytical essays with evidence-based arguments, while also writing rhetorical essays that ask them to experiment with different voices and intended audiences.

Goals

Our goal in tenth-grade English is to expand and deepen skills in reading, writing, critical thinking, and collaborative dialogue. Through encounters with a variety of literary texts, students will develop more sophisticated ways to analyze literary works and their devices; use writing mechanics, structure, and style to articulate ideas in various modes of writing; and communicate ideas to others. Another goal of English 10 is to examine and understand relations of culture, identity, and power by focusing on literature produced outside the West.

Homework & Assignments

Students will have reading and/or writing homework to prepare for each class meeting. Students will learn how to reflect on their reading through annotations and other short writing assignments. For larger writing assignments, students will continue to write analytical essays, but the types and modes of assignments will expand to include new persuasive strategies such as writing with voice, tone, and rhetorical purpose in mind.

Assessment

Students will receive ongoing verbal and written feedback on their developing skills. For major writing assignments, students will be given two forms of feedback: a comment from the instructor and a rubric that will assess the development of their writing skills based on the course template. Students will also learn how to assess their own skills and progress using the template. Both students and parents will receive formal midterm and end-of-semester evaluations, including course templates, to help them keep track of their ongoing progress toward all course goals.

Readings

In the fall, our course readings will include short stories, poems, and essays that introduce colonial and postcolonial literature: “The I is Never Alone” by Marcel Marien; “Shooting an Elephant” by George Orwell”; “Toba Tek Singh” by Saadat Hasan Manto; “The Bird-Dreaming Baobab” by Mia Couto; and “In the Waiting Room” and “Going to the Bakery” by Elizabeth Bishop. Major texts include *A Small Place* by Jamaica Kincaid and *Heart of Darkness* by Joseph Conrad. In the spring, students will begin the semester with Arundhati Roy’s postcolonial novel *The God of Small Things*, followed by readings in environmental studies that prepare students for the tenth-grade trip to Costa Rica, including selections from Charles Darwin’s *Voyage of the Beagle*, Rachel Carson’s *Silent Spring*, and Rebecca Giggs’ “Whale Fall.” In addition, we will read short stories by Costa Rican authors, and we will end the year with a unit on eco-poetry.

Materials

Students will need a notebook for writing and may want a three-ring binder to keep track of their English handouts and other materials. Each student will be expected to bring the relevant text(s) on which we are working to class. Books will include *A Small Place*, *Heart of Darkness*, *The God of Small Things*, and *Costa Rica: A Traveler’s Literary Companion*.

Grade 11 English: American Literature

Overview

The particular focus in this course is the rich and varied history of American literature, from precolonial writings to the 21st century. Throughout the year, we will have the opportunity to examine and reflect on the complex interplay between literature (and other cultural forms) and the historical and political forces that shape it. The course is designed to also integrate with History 11, American History, so students will be able to make deep

interdisciplinary connections in course discussions and essays. The overarching question for the course is "What stories do we tell ourselves as Americans, and why?"

Readings of diverse texts (in genre, period, author's background, etc.) — from Native American poetry and early Gothic fiction to modernist novels and postmodern plays — will encourage students to respond to this question through three key lenses (enduring understandings):

1. American identities are shaped by a multitude of voices, cultures, and actions that are often in conflict with each other.
2. American literature is a product of historical dynamics that continue to resonate today in new ways.
3. American literary forms reflect the changing notions and needs of a democratic society.

Goals

The goal of English 11 is to reflect on why and how Americans tell the stories they do and to foster more independent and interdisciplinary thinking and research in students. English 11 builds on key disciplinary skills developed in English 9 and 10 — including analytical writing, close reading, rhetorical analysis, and public speaking — while also building more sustained interdisciplinary writing and thinking skills through a close collaboration with History 11.

Homework

Students will annotate texts as they read, and they will write reading journals. Larger projects will include analytical essays, creative writing, and interdisciplinary work with History.

Assessment

As students make their way through American literary history, they will respond to texts and contexts through a variety of performance tasks that will be assessed by rubrics and teacher comments. For example, students will write an original research paper and an essay that considers the connections between literature, history, and other artistic forms (music, visual art) with the history and culture of the Great Depression. Students will also gain real-world practice in literary analysis by responding to the work of a professional critic of American literature.

Materials

Major works might include the following:

Arthur Miller, *The Crucible*
Herman Melville, "Benito Cereno"
Nella Larsen, *Passing*
Louise Erdrich, *Tracks*

Other excerpts and selections from works might include:

Native American stories
Early American sermons
Captivity narratives
Slave narratives
Whitman, *Leaves of Grass*
Irving, "Sleepy Hollow"
Hawthorne, "Young Goodman Brown"
W.E.B. DuBois, "The Souls of Black Folk"
Various poems by Langston Hughes
Various poems by Countee Cullen
Various poems by Sylvia Plath
Allen Ginsberg, "Howl," "A Supermarket in California"
Various poems by Gwendolyn Brooks
Joan Didion, "Slouching Towards Bethlehem"
Various poems by LeRoi Jones/Amiri Baraka
Maya Angelou, "On the Pulse of Morning"
Jhumpa Lahiri, "The Third and Final Continent"
Junot Diaz, "How to Date a Brown Girl (Black Girl, White Girl, or Halfie)"

This World Is Not Conclusion: Twentieth-Century American Poetry

Overview

This course will survey the wide array of poetic modes explored by 20th century American poets. We will begin the semester with readings in contemporary issues surrounding canonization and anthologization. We will then study the implications and underpinnings of modernism in the early 20th century, a movement that encompassed surrealism, objectivism, imagism, futurism, cubism, dadaism, and expressionism, among other -isms. Students will survey Modernist poetry through in-depth study of their own choices of poets, studying not only specific works by these writers, but also these writers' historical and cultural contexts. We will then look at other 20th century trends and schools through in-depth study of several postmodern poets, including John Berryman, Frank O'Hara, Harryette Mullen, and Lyn Hejinian. This course will ask students to do close readings of poems, to connect poetry to its historical and cultural contexts, and to work on creative projects that may involve (but will not require) writing some poetry.

Goals

We will frame our study of 20th century American poetry through the following essential questions:

- What are the historical, cultural, and social implications of formal reinventions in poetry?
- How do 20th century American poets respond to historical events and to each other?
- How does American poetry reflect the heterogeneity of our culture and population?

Homework & Assignments

Students will have reading and/or writing homework to prepare for each class meeting. Students will also complete assessments that will include working in small groups to teach a class on a Modernist poet; writing a close reading of a poem; writing a *New Yorker*–style book review; and, finally, completing a creative project that may include writing poetry.

Materials

Students will need a notebook for note-taking and may want a three-ring binder to keep track of their handouts and other materials. Each student will be expected to bring the relevant text(s) on which we are working to class. Texts will include *Lunch Poems* (O'Hara), *77 Dream Songs* (Berryman), *My Life* (Hejinian), and *Sleeping with the Alphabet* (Mullen).

Assessment

Students will receive ongoing verbal and written feedback on their ability to synthesize close reading and historical and cultural context. For major writing assignments, students will be given two forms of feedback: a comment from the instructor and a rubric based on the course template that will assess the development of their writing skills. Students will also learn how to assess their own skills and progress using the template. Both students and parents will receive formal midterm and end-of-semester evaluations, including course templates, to help them keep track of their ongoing progress toward all course goals.

Adaptations: From Text to Screen and Stage

Overview

Welcome to Adaptations! As our course title suggests, we will read a selection of what have been deemed adaptations. We will consider how these original forms are adapted and what is gained or lost in the process. Of course, we will also explore the various uses of narrative and aesthetic techniques to inform our understanding of the authors' innovation and our own craft as writers.

In this semester, your primary charge will be to closely analyze texts and films as a means to construct sophisticated arguments. Beyond building your skills as students of literature and culture, you will be responsible for examining an adaptation of your choice as well as crafting your own adaptation.

Goals

Together we will explore the following essential questions:

- What does it mean to adapt a story?
- What elements are necessary for a successful adaptation?
- How does form influence function?
- How do the stories we tell represent various identities and cultures?

Homework and Assessment

You will have several opportunities to demonstrate your understanding of our course materials. Here are some modes in which you will be assessed:

- 1 or 2 short close readings of a selected shared text/adaptation
- 1 lesson plan based on an adaptation of your choice
- 1 analytical essay with critical theory of an adaptation of your choice
- 1 adaptation of your own creation (this will be your final project in the course)

Course Readings

- *Ghostworld* by Daniel Clowes
- *Crazy Rich Asians* by Kevin Kwan
- *Stories of Your Life and Others* by Ted Chiang
- *Save the Cat* by Blake Snyder
- *Do Androids Dream of Electric Sheep?* by Philip K Dick

Contemporary Narratives of Slavery

Overview

While the slave narrative has been a central genre of American literature since the nineteenth century, over the last fifty years a wave of novelists, artists, and filmmakers have repeatedly revived and reimagined the form. This course will explore how the "neo-slave narrative," or "meta-slave narrative," has evolved from the 1980s to the present, tracking the ways in which these portraits of nineteenth-century America illuminate the racial politics of America today. We'll begin by reading a range of extracts from historical narratives by Mary Prince, Frederick Douglass, Solomon Northrup, Harriet Jacobs and Hannah Crafts to survey the landscape of the genre. Next, we'll read Toni Morrison's *Beloved* alongside the political and literary history of the Reagan era. Juxtaposing Colson Whitehead's *Underground Railroad* with Yaa Gyasi's multi-generational saga, *Homegoing*, we'll attempt to pin down where the genre stands at present. Throughout the course we will also focus on contemporary narratives of slavery in art and film, from Kara Walker's silhouette installations to Jordan Peele's *Get Out,* and read a variety of critical perspectives.

Goals

Students in this course will develop a deep knowledge of one of contemporary literature's most important genres, as well as an understanding of the fundamentals of genre itself. They will explore enduring questions and understandings such as:

- What are the conventions, purpose, and audience of the slave narrative genre?
- How do contemporary writers transform these conventions, and to what ends?
- What are the stylistic and structural features of contemporary literature?
- How do contemporary artists and writers respond to social, cultural, and political change?

- How and why do these writers and artists engage the past in ongoing conversation with the present?
- How can we connect these texts to our understanding of race in the current political climate?

Homework & Assessment

Students will have reading and/or writing homework to prepare for each class meeting. Students will also complete assessments that may include working alone or in pairs to teach a class period on an historical slave narrative and the writer's life; writing a close reading of an extract from a story; writing an essay which compares two works from different periods; completing a creative project; and, finally, writing a *New Yorker*–style piece which explores some aspect of our themes in the contemporary world.

Materials

Course anthology — extracts from classic slave narratives
Course anthology — critical readings
Beloved, Toni Morrison
The Underground Railroad, Colson Whitehead
Homegoing, Yaa Gyasi.

French Literature: From the Hexagon and Beyond

Overview

This course will introduce students to the diversity of French and Francophone literature. We will explore aspects of French history and culture as well as how France and the Francophone world engage with each other. We will begin by reading the 18th century French fairy tale of *La Belle et La Bête,* and finish by exploring twentieth-century postcolonial works. Through the reading of some of the major works in the canon of French and Francophone literature, some of the themes studied will include: the traditional versus the modern, the importance of language in France and issues of language in colonial and post-colonial Africa, identity concerns, and issues of gender. All works may be read in their original French or in English translation. The course is designed to develop the necessary skills for interpreting world literature and for writing effectively (in French or English). Students will continue to develop their close reading skills and analysis of a variety of literary works and to compose critical essays.

Goals

- to sample some of the classics of French/Francophone literary production
- to explain and contextualize the literature
- to appreciate its development and evolution from the Middle Ages to the 20th century
- to develop analytical skills as they pertain to the study of literary form and meaning
- to understand and appreciate the diversity of the French/Francophone culture
- to expand our knowledge of world literature and diversity
- to further develop reading, speaking, writing, and research skills

Materials

Tristan and Iseult by Joseph Bedier
La Belle et La Bête by Jeanne-Marie LePrince de Beaumont.
Huis Clos by Jean Paul Sartre
L'Etranger by Albert Camus
La Rue Cases Nègres by Joseph Zobel
Breath, Eyes, Memory by Edwidge Danticat

Homework & Assessment

Students will have reading and/or writing homework to prepare for each class meeting. Students will also complete assessments that will include short essays, persuasive writings, literary essays, student-led discussions, and debates. Students will receive ongoing verbal and written feedback on their ability to synthesize close reading and historical and cultural context. For major writing assignments, students will be given two forms of feedback: a comment from the instructor and a rubric based on the course template that will assess the development of their writing skills. Students will also learn how to assess their own skills and progress using the template. Both students and parents will receive formal midterm and end-of-semester evaluations, including course templates, to help them keep track of their ongoing progress toward all course goals.

The Immortal Gothic Genre

Overview

Fatal longings, haunted spaces, "carnal, bloody and unnatural acts" — in this unit, students will examine how writers make use of Gothic conventions to explore repressed histories of transgressive behavior: violence, crime, madness and illicit sexuality. Students will survey extracts from eighteenth-century Gothic texts to explore the cultural and political origins of the genre. They will develop an understanding of the conventions of this genre and explore its expression in fashions in art, architecture, gardens and other cultural texts, and its influences upon C19th and early C20th Gothic texts in England and America.

Students will trace how three C20th writers have exploited and transformed Gothic conventions to critique the family and the family home, class and race, gender and sexuality, using the charged Gothic setting as the dark double of the conventional domestic space. For instance, Angela Carter's short stories experiment with variations on the Bluebeard or *homme fatale* trope to explore the concerns of 1980s feminism; Tennessee Williams' *Suddenly, Last Summer* interrogates 1950s attitudes to sexuality; and Toni Morrison's *Beloved* uses the revenant and the haunted house to animate the repressed narrative of slavery.

Finally, students will investigate contemporary TV and film texts to ask themselves which fears and desires the Gothic speaks to in the early C21st. They will read a range of theoretical works which reflect upon the history of this genre and its transformations, particularly its aptness to examine the narratives of women, homosexuals and people of color. Critics could include Sandra M. Gilbert and Susan Guber, *The Madwoman in the Attic,* Anne Williams, *Art of Darkness*, and Kate Ferguson Ellis, *The Contested Castle*.

Goals

Students will explore the following enduring understandings and essential questions.

- What is the Gothic genre?
- What are its conventions?
- Writers employ the Gothic genre to explore forbidden or repressed narratives.
- Gothic writers experiment with the conventions of the genre in order to reflect societal and cultural changes.
- The Gothic genre relies on particular tropes to produce specific effects upon the reader/view.
- How have a range of writers exploited or transformed its tropes, and for what purposes?
- How can we account for its persistence throughout many periods and in a variety of forms?
- Which dark places does this genre explore?
- Which effects does this genre produce upon the reader/viewer, and to what ends?

Materials

Suddenly, Last Summer, Tennessee Williams
Beloved, Toni Morrison
The Bloody Chamber, Angela Carter

Course anthology, including stories by Edgar Allen Poe, Flannery O'Connor, Arthur Conan Doyle, H. P. Lovecraft, Isabelle Allende, William Faulkner, and Charlotte Perkins Stetson.
Excerpts from works of criticism, including Freud, Eve Kosovo Sedgwick, Ann Williams, Terry Castle, Kate Ferguson Ellis, Sandra M. Gilbert, and Susan Guber.
Excerpts from a range of films and TV shows, perhaps including *Penny Dreadful*, *Sherlock*, *American Horror Story*, *Crimson Peak*, *The Shining*, *The Others*, *The Innocents,* and *Ex Machina*.

Homework & Assignments

Students will have reading and/or writing homework to prepare for each class meeting. Students will also complete assessments that may include working alone or in pairs to teach a class period on a Gothic writer and that writer's historical and cultural context; writing a close reading of an extract from a story; writing an essay which compares two works from different periods; completing a creative project that may include writing a Gothic poem or narrative; and, finally, writing a *New Yorker*–style piece which explores some aspect of the Gothic in the contemporary world.

Foundations of Science: Chemistry

Overview & Goals

Nueva's ninth-grade science provides a unified introduction to the principles that describe the natural world at its most fundamental level. The course aims to improve students' understanding of the world around us, and make their thinking more rigorous, by introducing principles of chemistry and applying those concepts in hands-on ways to real-world examples. We also aim for students to develop a robust set of scientific practices: methods for asking questions, designing and carrying out experiments, interpreting the results, and communicating their conclusions to others.

Topics studied this year include:

- atomic nature of matter
- bonding in materials
- chemical reactions
- stoichiometry

Materials

Rather than assigning a single text, we draw on readings, videos, and activities from a variety of sources. And while we do not rely on a common text, we are happy to provide suggestions for supplementary materials. The course Canvas site will contain readings and digital copies of documents that are handed out in class. We encourage students to discover additional resources and share them with both us and their peers.

Weekly Class Structure — What to Bring

Foundations of Science meets as often as three times a week. Wherever practical, students explore the core concepts experientially and experimentally. Much of the course is built around a series of "missions" in which students work in groups during one to several class sessions to solve a problem requiring the integration of content understanding and laboratory technique.

Students should bring to class:

- a laptop (used for data collection, research, and simulations), and/or
- a notebook and a pen or pencil
- *optional*: a three-ring binder with paper for notes and tabs to help organize; this may be shared with other subjects as long as the organization scheme effectively differentiates
- their curiosity, enthusiasm, and sense of humor

Homework

Students should spend an average of about one hour or less on homework per week. In general, assignments might consist of doing a short reading to review and/or formalize learning from class, watching an explanatory video, or finishing a worksheet or write-up from class. Extension problem sets and activities can be made available for those who seek more challenge and/or depth; if they are insufficient, students should ask for more. Students also sometimes find concepts and quantitative problems in chemistry to be challenging; indeed, we hope that each will feel challenged in this course. It is our hope and intent that, when confronted with a challenge, students will feel motivated to review the materials provided to them closely, meet with their teachers outside of class, and discuss problem-solving approaches (but not specific answers) with their peers.

In this course, parents should not assist their children with homework as this prevents students from building intellectual independence and interferes with our ability to assess, support, and plan their learning. If a student appears to be going down a path of feeling lesser-than, or talks about being "not good at science," *please do let us know* and encourage the student to seek our advice. Most of all, if students appear to be struggling, please encourage them to email or talk with one of the instructors.

Assessment & Evaluation

Students may be asked to submit lab write-ups or reflections as well as quizzes or in-class problem sets. We also observe student practices and problem-solving approaches during class. Students will also work on a substantial project in the January/February/March timeframe to build their individual scientific skills and apply their understanding to an area of personal interest. Students will present these projects at the Nueva STEM fair. Again, we ask that parents provide moral support while refraining from offering academic assistance.

No grades of any kind will be assigned in the fall semester in alignment with school-wide policies for grade 9. This is meant as a time of intellectual risk-taking, passion-driven learning, and cognitive growth. Students will be evaluated at the end of the spring semester with a standards-based grading protocol. While they will receive letter grades for specific learning objectives (content understanding, scientific skills, and learning habits), they will not receive an overall course grade, nor will any of this grading appear on their external academic record.

Intro to Experimental Bioorganic Chemistry

Overview & Goals

The objective of this course is to discover organic chemistry, the chemistry of carbon, experimentally. Organic molecules such as petrochemicals, natural products, biomolecules, and pharmaceuticals are an integral part of our daily lives. Selected experiments will present common laboratory practices and techniques of organic chemistry, such as chromatography and distillation, and illustrate the chemistry of a wide range of functional groups. Other experiments will allow students to synthesize specific compounds — some of which are found in nature or are of commercial importance — or to explore reactions that are fundamental to organic synthesis: nucleophilic substitution, nucleophilic addition, electrophilic addition, esterification, and oxidation. Additional experiments will emphasize discovery-based approaches, which allow students to develop their own protocols for addressing a particular question experimentally, as they might do in a research laboratory.

The course in general aims for students to develop a robust set of scientific practices: methods for asking questions, designing and carrying out experiments, interpreting results, communicating their results to others, and practicing analytical and reasoning skills based on observations.

Topics to be covered during the year include:

- chemical bonding and molecular structure
- hydrocarbons
- kinetics and energy of a reaction

- stereochemistry
- functional groups in organic chemistry
- reaction mechanisms
- chemistry of proteins and enzymes
- independent project

Resources
Rather than assign a single textbook, I will be excerpting from a variety of sources. The class website will direct students to some of the many (free) resources available on the Internet. I will also provide slide decks available after each class, recapping content viewed that day.

Weekly Class Structure — What to Bring
Experimental Bioorganic Chemistry meets up to three times a week. Wherever practical, I seek to have students experimentally and sometimes quantitatively explore the core concepts. This will take the form of labs, demonstrations, and/or modeling (using a variety of software).

Students should bring to class:

- a laptop (mostly for researching specific topics, writing lab reports, graphing data, drawing 3-D structures)
- a thick notebook for notes, problem practices, brainstorming, planning, reflections
- a couple of pens
- curiosity, enthusiasm, analytical and reasoning skills

Homework
I will give students homework that may last up to 60 minutes once or twice a week. The assignments might consist of analyzing data collected during a lab session, watching an explanatory video, tackling numerical or descriptive problems, reading content, researching a topic or writing up the results of a laboratory activity. Students may sometimes find organic chemistry to be challenging. It is my hope and intent that, when confronted with a challenge, students will feel motivated to review the materials provided to them closely, meet with me outside of class, and discuss problem-solving approaches (but not specific answers) with their peers.

Assessment
Students will be asked to:

- submit homework
- submit selected lab write-ups
- orally present content
- demonstrate problem-solving skills with quizzes/exit tickets or longer tests (one per unit)
- reflect

Students will be asked at times to conduct an experiment in class in lieu of a test. I will also observe student practices and problem-solving approaches during class, which will allow me to provide informal feedback.

Drug Design

Overview
This lab-based introductory medicinal chemistry class emphasizes the application of biological, chemical, and pharmacological concepts in the investigation of drug discovery. Medicinal chemistry has been defined as the "science that deals with the discovery and design of new therapeutic chemicals and their development into useful medicines" (Silverman, 1992). The aim of the class is to introduce students to the basic principles of medicinal chemistry and how they are applied to the design of new therapeutics. The emphasis of this course is that therapeutically relevant small molecules are chemical entities whose biological properties are dependent on chemical structure and physicochemical properties. Therefore, modifications of physicochemical properties

are likely to influence the biological behavior of the small molecule. At the end of the course, the student will have a greater awareness of "drug-like" properties in a chemical structure (lipophilicity, H-bonding potential, toxicity potential) and approaches to modify some of the pharmacological properties of compounds. Throughout the class, students will gain confidence in studying a scientific discipline and acquire an appreciation for the field of medicinal chemistry.

Topics to be covered during the year include:

- spectroscopy
- intro to anatomy and physiology
- structure-activity relationship: antibacterials
- structure-activity: cell cycle kinase inhibitors

Resources

Rather than assign a single textbook, I will be excerpting from a variety of sources. The class website will direct students to some of the many (free) resources available on the Internet. I will also provide slide decks available after each class recapping content viewed that day.

Weekly Class Structure — What to Bring

Drug design meets up to three times a week. Wherever practical, I seek to have students experimentally and quantitatively explore the core concepts. This will take the form of labs, demonstrations, data analysis, and/or modeling (using a variety of software).

Students should bring to class:

- a laptop (mostly used for researching specific topics, writing lab reports, graphing data, drawing structures in 3-D)
- a thick notebook for notes, problem practices, brainstorming, planning, reflections
- a couple of pens
- curiosity, enthusiasm, analytical and reasoning skills

Homework

I will give students homework that may last up to 60 minutes once or twice a week. The assignments might consist of analyzing data collected during a lab session, watching an explanatory video, tackling numerical or descriptive problems, reading content, researching a topic, or writing up the results of a laboratory activity. Students may sometimes feel challenged. It is my hope and intent that, when confronted with a challenge, students will feel motivated to review the materials provided to them closely, meet with me outside of class, and discuss problem-solving approaches (but not specific answers) with their peers.

Assessment

Students will be asked to:

- submit homework
- submit selected lab write-ups
- orally present content
- demonstrate problem-solving skills with longer tests (one per unit)
- demonstrate problem-solving skills with independent projects
- reflect

Students will be asked at times to conduct an experiment in class in lieu of a test. I will also observe student practices and problem-solving approaches during class, which will allow me to provide informal feedback.

Biology

Overview

Nueva's tenth-grade biology will apply to living systems the concepts of chemistry taught in ninth grade. Building upon the ninth-grade curriculum, students will begin with the microscopic perspectives of biochemistry and molecular biology, and eventually pull back to the larger views afforded by the study of evolution and ecology. Students will be engaged in hands-on learning of the content through practices that scientists use daily in discovering knowledge — asking questions, designing and carrying out experiments, interpreting the results, and communicating their results to others.

Topics to be covered during the year include:

- biochemistry and macromolecules
- the asexual cell cycle
- gene expression and epigenetics
- the microbiome
- inheritance
- evolution
- ecology

Goals

Students will:

- demonstrate breadth and depth of knowledge in biology
- apply concepts to novel situations within biology as well as other disciplines
- plan and carry out investigations
- analyze and interpret data
- obtain, evaluate, and communicate information

Materials

Daily, students should bring to class:

- a laptop (for background research and as a data collection interface)
- a tool students can use as a notebook, whether physical or digital or a hybrid note-taking tool
- a writing utensil

Rather than assign a single textbook, we will be excerpting from a variety of sources. Canvas will direct students to some of the many (free) resources available online. Students are also invited to use a digital textbook on ck12.org created by Michaela as a resource for the course (*Foundations of Science: 10th Grade Biology*).

Homework

We ask students to spend an average of about 30 minutes on homework per class meeting. These assignments may include exploring topics in greater depth, working problem sets, analyzing data collected during a lab session, writing up statements of understandings of the labs, watching or creating explanatory videos, reflecting on their learning, etc. It is also essential that students reflect on concepts in class and continue to build understanding through making connections to everyday life.

Assessment

There will be many types of evaluations in this class and each will be tailored to either a skill set or a type of content knowledge. Students will be also continuously evaluated on several habits of learning.

Content

Students will be evaluated on content at least once every two weeks. We want to make sure that students have enough time to study, but we want to make sure that they get frequent feedback; thus the two-week timeline. These frequent evaluations are formative assessments, which give students a chance to check how much

content understanding they can demonstrate and thereby give them a chance to adjust their learning to meet their academic goals.

Skills

The skills in this class generally fall into two categories: the ability to do science and the ability to communicate science. “Doing science” refers to the ability to analyze and generate robust experiments. These skills will be evaluated in a variety of ways including observation of lab skills during class, ability to create or generate products in the lab, and communication of experimental outcomes.

Habits of Learning

The habits of learning are continuously evaluated throughout the semester. These habits, if developed, will help students become strong and capable learners in all classes. Timeliness, seeking help when having trouble, and helping others to learn are the cornerstones of the habits of learning.

Grading

Students will receive a 4, 3, or 2 for each of the essential understandings and specific skills. A 4 indicates mastery, a 3 indicates proficiency, and a 2 indicates a foundational outcome. If a student does not demonstrate any level of mastery, they must seek additional opportunities to demonstrate one. Each of the rows/scores in the 3 main categories (content, skills, and habits of learning) will be averaged to produce a score for each of the main categories. The scores in each of the main categories will be weighted and then averaged together to produce a grade.

Physics

Goals

This course aims to improve students’ understanding of the world around us, and make their thinking more rigorous, by introducing principles of physical sciences and applying those concepts to real-world examples. We also aim for students to develop a robust set of scientific practices: methods for asking questions, designing and carrying out experiments, interpreting the results, and communicating their results to others The course emphasizes important principles such as Newton’s laws and includes more specific phenomena as necessary to illuminate those principles. Students explore physics experimentally whenever practical. When a phenomenon is not tractable to classroom demonstration, digital simulations are employed. Students explore new content primarily through teacher-created screencasts and readings, with some Socratic lecture and classroom discussion. Students spend most of their classroom time learning to solve problems, design and perform experiments, and analyze demonstrations of (sometimes unexpected) results.

Topics to be covered during the year include:

- kinematics
- dynamics
- conservation and transformations of energy
- gravity
- oscillations and waves
- sound, light, and optics

Much of the year will be devoted to kinematics and dynamics. Although some of the remaining topics overlap with the previous year’s ninth-grade science, the full-year format will allow exploration in substantially greater depth.

Resources

Rather than assign a single textbook, I will be excerpting from a variety of sources as well as producing readings for students. Class web sites also direct students to some of the many (free) resources available on the internet.

Weekly Class Structure — What to Bring

The class meets in a laboratory or room with lab space available. We seek to have students explore core concepts experimentally/experientially and quantitatively whenever practical. This may take the form of labs, demonstrations, and/or numerical simulations (often constructed by the students using a variety of software).

Students should bring to class:

- their Nueva laptop (used for data collection in lab and for simulations)
- a three-ring binder with paper for notes, and tabs to help organize, or a bound notebook with a dedicated science section
- a dedicated lab notebook
- a pen or pencil
- their curiosity, enthusiasm, and sense of humor

Homework

I ask students to spend an average of 20–30 minutes on homework per class meeting. Their assignments might consist of analyzing data collected during a lab session, watching an explanatory video, tackling numerical or descriptive problems, or writing up a Statement of Understanding from a laboratory activity. Students sometimes find quantitative problems in the physical sciences to be challenging. It is my hope and intent that, when confronted with a challenge, students will feel motivated to review the materials provided to them closely, meet with me outside of class, and discuss problem-solving approaches (but not specific answers) with their peers. If a student appears to be going down a path of feeling lesser-than, or refers to himself/herself as "not good at science," please let me know!

Assessment

Students may be asked to submit homework, lab write-ups, reflections, as well as quizzes or longer tests. We also try to observe student practices and problem-solving approaches during class. Students may also tackle more extensive projects as they gain laboratory and investigational skills.

Advanced Mechanics

Goals

This course represents an in-depth study of mechanics, including the mathematical tools of calculus, with an emphasis on elements of mechanical engineering. Unlike the treatment in first-year physics, where objects are usually approximated as point masses or having infinite stiffness, here we may consider an object's center of mass, rotational inertia, modulus of elasticity, or other properties. Students solve problems of substantially greater complexity than those encountered in earlier classes. We also aim for students to develop a robust set of scientific practices: methods for asking questions, designing and carrying out experiments, interpreting the results, and communicating their results to others. Students explore physics experimentally whenever practical. When a phenomenon is not tractable to classroom demonstration, digital simulations are employed. Students explore new content primarily through teacher-created screencasts and readings, with some Socratic lecture and classroom discussion. Students spend most of their classroom time learning to solve problems, design and perform experiments, and analyze demonstrations of (sometimes unexpected) results.

Topics to be covered during the year include:

- kinematics
- dynamics
- center of mass, impulse, and momentum
- conservation and transformations of energy
- gravity
- rotation and rolling

- oscillations and waves

Resources
Rather than assign a single textbook, we will be excerpting from a variety of sources as well as producing readings for our students. Class web sites also direct students to some of the many (free) resources available on the internet.

Weekly Class Structure — What to Bring
The class meets three times a week, always in a laboratory. We seek to have students explore core concepts experimentally/experientially and quantitatively whenever practical. This may take the form of labs, demonstrations, and/or numerical simulations.

Students should bring to class:
- their Nueva laptop (used for data collection in lab and for simulations)
- a three-ring binder with paper for notes and tabs to help organize, or a bound notebook with a dedicated science section
- a dedicated lab notebook
- a pen or pencil
- their curiosity and enthusiasm

Homework
We ask students to spend an average of 20–30 minutes on homework per class meeting. Their assignments might consist of analyzing data collected during a lab session, watching an explanatory video, tackling numerical or descriptive problems, or writing up a Lab Report. Students sometimes find quantitative problems in the physical sciences to be challenging. It is our hope and intent that, when confronted with a challenge, students will feel motivated to review the materials provided to them closely, meet with us outside of class, and discuss problem-solving approaches (but not specific answers) with their peers. If a student appears to be going down a path of feeling lesser-than, or refers to himself/herself as “not good at science,” please let us know!

Assessment
Students may be asked to submit homework, lab write-ups, reflections, as well as quizzes or longer tests. We also try to observe student practices and problem-solving approaches during class. Students will also tackle more extensive independent projects as they gain laboratory and investigational skills.

Modern Physics

Goals
This course builds on the first-year introduction to physics and generally covers developments from the late 19th century through the present day. Transitioning from the relatively intuitive principles of classical physics, students explore the more conceptually profound and challenging ideas demanded by 20th and 21th century science. Students will study phenomena experimentally whenever practical. When a phenomenon is not tractable to classroom demonstration, digital simulations are employed. Students explore new content primarily through teacher-created screencasts and readings, with some Socratic lecture and classroom discussion. Students spend most of their classroom time learning to solve problems, design and perform experiments, and analyze demonstrations of (sometimes unexpected) results.

Topics to be covered during the year include:
- electromagnetism
- relativity
- nuclear physics
- quantum physics

- standard model of particle physics

Resources
We will be excerpting from a variety of sources, but are likely to rely on a textbook for our exploration of quantum phenomena. Class web sites also direct students to some of the many (free) resources available on the internet.

Weekly Class Structure — What to Bring
The class meets two or three times a week, always in a laboratory or with lab space available. We seek to have students explore core concepts experimentally/experientially and quantitatively whenever practical. This may take the form of labs, demonstrations, and/or numerical simulations (often constructed by the students using a variety of software).

Students should bring to class:

- their Nueva laptop (used for data collection in lab and for simulations)
- a three-ring binder with paper for notes, and tabs to help organize, or a bound notebook with a dedicated science section
- a dedicated lab notebook
- a pen or pencil
- their curiosity, enthusiasm, and sense of humor

Homework
We ask students to spend an average of 20–30 minutes on homework per class meeting. Their assignments might consist of analyzing data collected during a lab session, watching an explanatory video, tackling numerical or descriptive problems, or writing up a Statement of Understanding from a laboratory activity. Students sometimes find quantitative problems in the physical sciences to be challenging. It is our hope and intent that, when confronted with a challenge, students will feel motivated to review the materials provided to them closely, meet with us outside of class, and discuss problem-solving approaches (but not specific answers) with their peers. If a student appears to be going down a path of feeling lesser-than, or refers to himself/herself as "not good at science," please let us know!

Assessment
Students may be asked to submit homework, lab write-ups, reflections, as well as quizzes or longer tests. We also try to observe student practices and problem-solving approaches during class. Students may also tackle more extensive projects as they gain laboratory and investigational skills.

Environmental Earth Science

Overview
The course is designed around four major modules, each serving to complement the others and contribute to the students' holistic understanding of the Earth System and humans' roles within it. The goal is for students to apply the understanding of modeling, systems thinking, and earth systems that they will have developed in the fall to tackling a problem or question related to human impacts on the planet later in the spring.

- Models and Systems Thinking
- Earth Systems (solid/fluid Earth, climate change, etc.)
- Human Impacts
- Capstone Projects (student-driven)

Goals

This full-year course aims to:

- build an applied understanding of major subsystems of the Earth System and their interactions with each other
- build an enduring understanding of the interactions between the Earth System and human civilization, with an emphasis on how each system affects the other
- motivate students to leverage their full skill set (science, humanities, etc.) to design and advocate for a better future

Materials

All students have been provided with a copy of *Earth System Science: A Very Short Introduction* (Oxford University Press, 2016), which will serve as the main text for the class. In addition to the primary sources and other online articles that will constitute the bulk of our reading, excerpts from the following books will also be assigned:

- *Thinking in Systems: A Primer* (Chelsea Green Publishing, 2008)
- *The Earth System, 3rd Ed.* (Pearson, 2009)
- *The Craft of Research, 4th Ed.* (Chicago Guides to Writing, Editing, and Publishing, 2016)
- *A Practical Guide for Policy Analysis: The Eightfold Path to More Effective Problem Solving, 5th Ed*. (CQ Press, 2015)

However, this is not meant to be a comprehensive list, and other books will likely be used.

Homework

Class will be a mixture of problem-solving, discussion, presentations, research article analysis, and independent learning, with some potential opportunities for field/lab work. Activities will be differentiated in recognition of the substantial diversity of backgrounds and interests students bring to this course.

While the homework load for this course will be not significant, students should expect to spend some time outside of class reading, writing, doing research, collaborating on long-term projects, studying concepts, preparing presentations, and going outside.

Field trips

There may be some optional weekend trips for those interested in field work.

Assessment & Evaluation

Deliverables

Students will be assessed through a variety of modes: reflections, in-class assessments, presentations, collaborative and individual projects, discussion, and field work.

Grading

At the end of the fall semester, students will be evaluated in several areas, outlined on the course learning objective template. For each area, there are three standards, building in complexity from Foundational to Exemplary. Mission deliverables and work in class will be evidence for evaluation of each area. Summative letter grades will be assigned based on the level of standards demonstrated.

External Evaluations

Students who elect to take external, standardized evaluations such as the AP Environmental Science exam are advised to engage in additional preparation. While mastery of the learning objectives of this course will improve student performance on external exams, this course is not designed to be sufficient preparation on its own for exemplary performance on these tests.

Bringing EES Home

The content of this course has relevance to a great many topics of everyday importance — traffic, phone charging, hills, sunsets, food at the table. Parents and guardians can always engage students in conversations

like “What did you learn today in EES?” or ask how what they have learned in the course so far gives them insight about anything lying in the current field of view. Current events often have direct or relevant environmental causes and effects and this might also be a way to engage EES students in broader conversations.

Parents, guardians, and/or tutors should not assist EES students with the completion of their work for the course. Parents and guardians should feel empowered to offer their services as a sounding board for their children if they can do so in a neutral manner, helping their child explore their own thoughts and ideas without offering direction or judgment. Students who describe struggling with the content or structure of EES should be encouraged to speak with the instructor, who is committed to every student thriving in this course.

Mathematics at Nueva

We recognize and firmly believe that mathematics and analytical thinking play an enormously important role in our world. Therefore, above all, we hope curiosity inspires our students to creatively seek out mathematical solutions to the myriad problems they face in all aspects of their lives, and that they find joy in playing with mathematical ideas. We expect our students to have the mathematical literacy to be able to see and explain the world around them through mathematics and to be able to consume information critically and produce rigorous results. We push our students to understand mathematics both in abstraction and in application, hoping to instill wonder and relevancy as students pursue real-world problem-solving strategies as well as deep competence in conceptual mathematics. It is our hope that, when faced with all types of problems and choices, Nueva students have the habits of mind to think through these mathematically. Once problems have been analyzed and understood, we firmly believe that mathematicians must be able to communicate their results with others and be able to extrapolate their results to new situations. Therefore, a heavy emphasis will be placed on reflection, communication of findings, application to other domains, collaboration with others, and the ability to justify and analyze thinking.

We see technology as an excellent medium for enriching student understanding and making the learning process broader and more tangible. Technology is embraced in modeling, investigation, abstraction, and prediction. All students are expected to bring their study of programming to bear on analyzing and modeling problems; students will generalize solutions on Excel, learning the commands for data analysis; they will use graphing calculators and online tools such as Desmos to tackle more complicated problems; and, in the Innovation Lab, students will be expected to bring math to life through models, art, and 3-D technology. Through these many modalities, students will uncover the multiple layering of mathematics and its applications. Technology will be used to enhance student understanding, never to replace it.

This three-year integrated sequence looks deeply at mathematical reasoning as a framework for discovery, exploration, and understanding. The courses build students’ competence in mathematical reasoning: asking probing questions, generalizing patterns, building strong arguments, finding multiple approaches to solving problems, reflecting on the problem-solving process, and communicating clear results. Students will explore mathematics as a cycle: we take problems (sometimes from the real world), abstract them, perform mathematical processes, and then apply and communicate our understanding. Students will also explore mathematical programming as a means of harnessing the power and function of computational thinking. Each course spirals through the threads of number systems, probability and statistics, geometry, and functions, going deeper and integrating these content domains to help students develop a variety of tools, representations, and ways of thinking mathematically.

Math 1

Overview

This course builds students' competence in mathematical reasoning, focusing on generalizing patterns, building strong arguments, and finding multiple approaches to solving problems. Students will learn to ask probing questions, reflect on their problem-solving process, and clearly communicate their findings. Students will develop mathematical fluency by integrating geometry and algebra with rich introductions to sets, logic and abstract algebra, quadratic and transcendental functions, congruence and similarity of triangles, formal proof and notation, descriptive statistics and vectors, . The underlying focus for the year is on building the language and foundations of mathematics.

Goals

- Generalize trends from patterns so as to ask questions, form hypotheses, test special cases, and prove observed trends
- Cultivate the metacognition to self-identify one's understanding/processing in order to recognize misunderstanding
- Construct sound proofs; evaluate the soundness of proofs; spot logical flaws in proofs and address them
- Instinctively bring a mathematical framework to problems; demonstrate the skills to abstract problems into the mathematical space and the skills to apply the result back to the real world
- Use functions as a formal means of abstracting and capturing real-world phenomena in mathematical terms
- Work from an understanding that many problems have multiple approaches so as to motivate finding creative and elegant solutions to problems and looking for connections
- Use the design thinking process to break complex problems into smaller pieces and pursue promising leads and test cases, iterating to uncover underlying patterns
- Use technology to explore, extrapolate, and calculate with greater precision
- Clearly state mathematical arguments and communicate mathematical results, identifying the core ideas of an argument and analyzing others' thinking and argumentation
- Be able to work productively both independently and with others; collaborate effectively, communicating one's thoughts and learning from and supporting others' efforts
- Make personal connections to mathematics, develop curiosity and self-agency as users and creators of mathematics, develop appreciation for beauty and elegance in mathematical thinking, and seek out challenges and persevere through them

Materials

Students are expected to come to class prepared. They should have the following every day:

- Computer (with Mathematica and Geometer's Sketchpad installed)
- Composition notebook with graph paper
- Pen, pencil, and eraser
- Protractor, compass, and ruler
- Something with which to take a picture and record a video (your computer can do this)
- nSpire calculator (for students intending to take standardized tests this year)
- Open and creative mind
- Textbook: Haese *Mathematics (Middle School IB)*, in digital form

Homework

Homework is an integral part of the learning experience for our students. We see homework as a time for students to reflect on what they have learned, make connections and new discoveries, and preview upcoming topics. Homework should be interesting and it should feel relevant. We expect students to engage deeply in the

assignments. Therefore, we ask our students to commit to forty five minutes per eighty minute class of undivided attention. Many assignments will provide additional problems and opportunities for students to dig deeply. If a student chooses to work more than forty five minutes because the work is invigorating, we encourage this provided it is done in a healthy and responsible manner. We expect homework to be completed with effort and on time in order to be as useful as possible for student learning. Students are encouraged to regularly review previous assignments and look for connections and opportunities to spiral deeper and transfer knowledge to a different domain. In addition to regular homework assignments, there will also be opportunities for students to engage in longer-term investigations and projects several times in a semester.

Assessment

It should be stated that we expect our students to develop mastery in the topics we cover. We also fully intend to provide opportunities for students to dig deeply into their own passions and interests. Our students, therefore, will have multiple opportunities to display mastery of material. Assessments will include, but are not limited to:

- created videos
- oral tests
- written summaries and reflections
- examples of exemplary work collected in a portfolio
- application problems
- labs and investigations done alone or with other students
- computer programs
- formal quizzes and tests

The assessments are geared to improve the way in which students learn as much as they are an opportunity to give feedback on how to improve one's current understanding. We strongly believe in growth mindset and will provide opportunities for students to iterate previous assessments to demonstrate progress. Homework assignments will generally be used as opportunities for learning and feedback, but can sometimes be used as secondary evidence of content mastery.

Grading

Students in grades 10, 11, and 12 receive an overall course grade that demonstrates knowledge of course content, mathematical practices, and habits of learning. The overall grade comprises 45% content, 35% practices, and 20% habits of learning. Students are given specific standards-based feedback regularly on their progress and encouraged to learn from, revise, and reassess in order to demonstrate progress over time.

Individual Assistance

Students should find assistance from their peers, from their teacher, and from other teachers. It is our belief that there is merit in having the grit and tenacity to work through problems on one's own at times. However, it is also our belief that working through problems with others (peers and teachers) is always a rich experience. We urge students to come talk to us about concerns, interests, or anything else that seems relevant. All upper school teachers have desks at school and will make every effort to be available to students. Please talk to your individual teacher to arrange help outside of class. Nueva math teachers and associate teachers are available before and after school, during lunch and tutorial, and during blocks throughout the day. Students can make an appointment to come in as needed.

Math 2

Overview

This course builds on the content and skills developed in Math 1, including an introduction and refinement of combinatorics and probability, polynomials, applications of trigonometry, and model building, further work with

number systems, functions, and geometric concepts related to circles and polygons, with an emphasis on connections between all of these strands. Students will work individually and in groups to derive, make sense of, and apply what they are learning to solve compelling problems, while continuing to develop their ability to reflect on and communicate their thinking effectively. Modeling and applying mathematics to the real world via connections to other disciplines will serve as a consistent thread throughout the course.

Goals

- Generalize trends from patterns so as to ask questions, form hypotheses, test special cases, and prove observed trends
- Cultivate the metacognition to self-identify one's understanding/processing in order to recognize misunderstanding
- Construct sound proofs; evaluate the soundness of proofs; spot logical flaws in proofs and address them
- Instinctively bring a mathematical framework to problems; demonstrate the skills to abstract problems into the mathematical space and the skills to apply the result back to the real world
- Use functions as a formal means of abstracting and capturing real-world events in mathematical terms
- Work from an understanding that many problems have multiple approaches so as to motivate finding creative and elegant solutions to problems and looking for connections
- Use the design thinking process to break complex problems into smaller pieces and pursue promising leads and test cases, iterating to uncover underlying patterns
- Use technology to explore, extrapolate, and calculate with greater precision
- Clearly state mathematical arguments and communicate mathematical results, identifying the core ideas of an argument and analyzing others' thinking and argumentation
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- Make personal connections to mathematics, develop curiosity and self-agency as users and creators of mathematics, develop appreciation for beauty and elegance in mathematical thinking, and seek out challenges and persevere through them

Materials

Students are expected to come to class prepared. They should have the following every day:

- computer
- composition notebook with graph paper
- pen, pencil, and eraser
- protractor, compass, and ruler
- something with which to take a picture and record a video (your computer can do this)
- nSpire calculator
- open and creative mind
- textbook: *Mathematics HL Core 3rd Edition*

In addition, we will use the online textbook *Understandable Statistics, Concepts and Methods*

Homework

Homework is an integral part of the learning experience for our students. We see homework as a time for students to reflect on what they have learned, make connections and new discoveries, and preview upcoming topics. Homework should be interesting and it should feel relevant. We expect students to engage deeply in the assignments. Therefore, we ask our students to commit to forty-five minutes per eighty minute class of undivided attention. Many assignments will provide additional problems and opportunities for students to dig deeply. If a student chooses to work more than forty-five minutes because the work is invigorating, we encourage this provided it is done in a healthy and responsible manner. We expect homework to be completed with effort and on time in order to be as useful as possible for student learning. Students are encouraged to regularly review previous assignments and look for connections and opportunities to spiral deeper and transfer

knowledge to a different domain. In addition to regular homework assignments, there will also be opportunities for students to engage in longer-term investigations and projects several times in a semester.

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Math 3

Overview

Students will spiral deeper into the content developed in Math 1 and Math 2 and prepare for advanced studies in calculus, statistics, number theory, abstract algebra, and other math electives, as well as physics, game theory, economics, and other science/social science electives through thought-provoking problems and projects. As topics from previous courses are deepened, Math 3 content will include statistical hypotheses, functions and their graphs, trigonometric proofs and identities, and various topics in geometry, including vectors, circles and conics, as well as introduce topics in calculus. Math 3 serves as a culminating course for Nueva's integrated Math curriculum, helping students see mathematics as a cohesive and beautiful system.

Goals

- Generalize trends from patterns so as to ask questions, form hypotheses, test special cases, and prove observed trends
- Cultivate the metacognition to self-identify one's understanding/processing in order to recognize misunderstanding
- Construct sound proofs; evaluate the soundness of proofs; spot logical flaws in proofs and address them
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- Make personal connections to mathematics, develop curiosity and self-agency as users and creators of mathematics, develop appreciation for beauty and elegance in mathematical thinking, and seek out challenges and persevere through them

Materials

Students are expected to come to class prepared. We recommend the following:

- computer
- composition notebook with graph paper
- pen, pencil, and eraser
- nSpire calculator
- open and creative mind
- textbook*: Mathematics HL Core 3rd Edition*, in digital form

Homework

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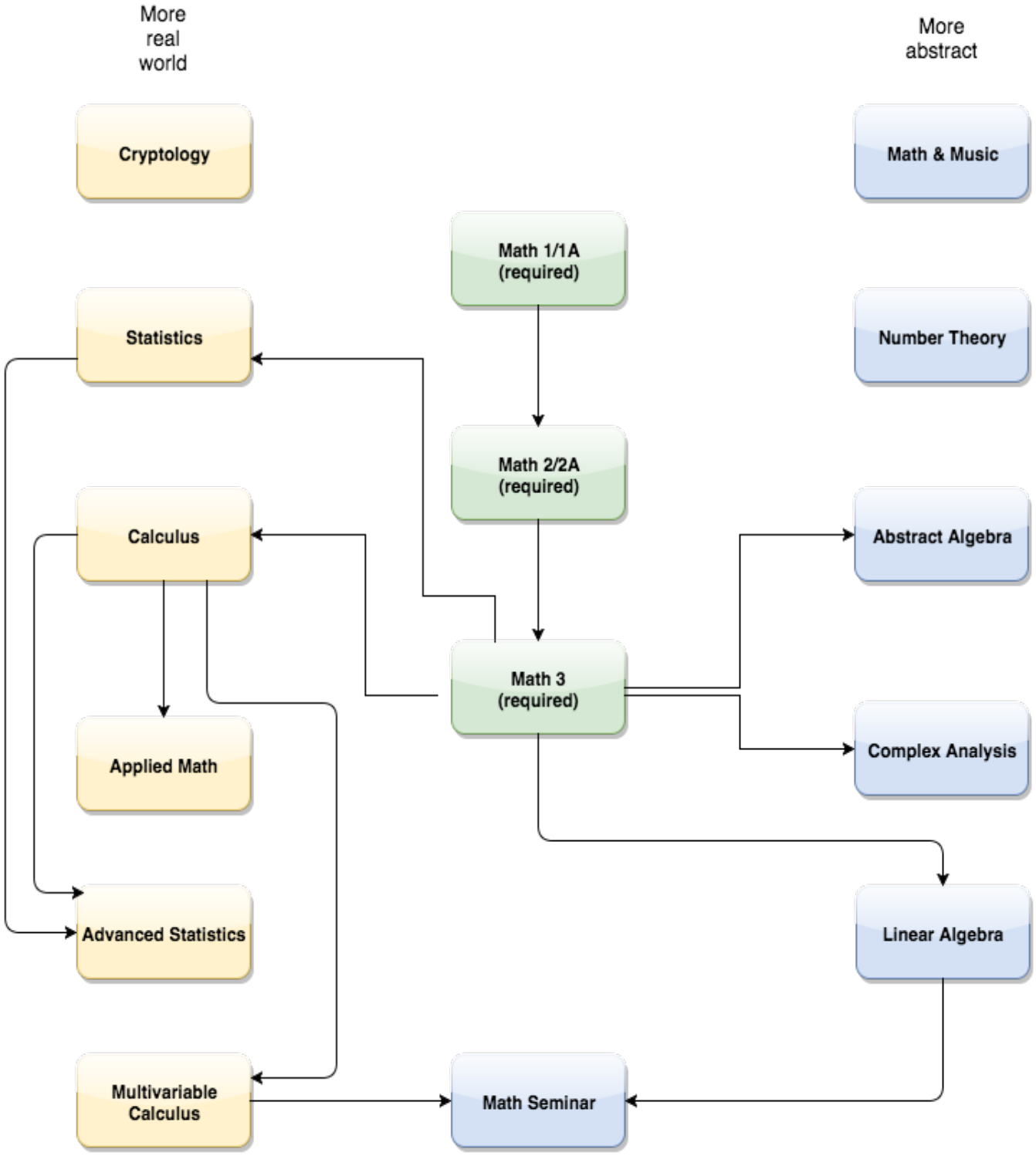
Flow of Math Courses



Green represents core curriculum, blue and yellow are electives, and arrows represent prerequisites.

Statistics and Probability

Overview

How do we become critical consumers of data? How do we use data effectively to create an argument that is statistically significant? What must we be cautious of when designing an experiment? This course in statistics first explores how to interpret categorical and quantitative data, including both 1- and 2-variate, and then explores different tests that allow us to make inferences and justify conclusions.

In the second semester, we will more deeply explore chance behavior, including independence and conditional probability, as well as how expected value allows us to evaluate outcomes of decisions. From politics to science, social justice to business, understanding statistics and probability gives students the tools to manipulate and make sense of the data all around us.

Goals

- To produce convincing oral and written statistical arguments, using appropriate terminology, in a variety of applied settings.
- To know when and how to use technology to aid in solving statistical problems.
- To become critical consumers of published statistical results by heightening your awareness of ways in which statistics can be improperly used to mislead, confuse, or distort the truth.
- To know and utilize essential techniques for producing data (surveys, experiments, observational studies), analyzing data (graphical & numerical summaries), modeling data (probability, random variables, sampling distributions), and drawing conclusions from data (inference procedures).

Homework

Homework serves a variety of purposes, such as practicing skills, reflecting on newly learned concepts, extending ideas from class work, introducing or previewing new concepts, and working on long-term assignments and projects. Homework is an opportunity to explore ideas and take risks, and perfection is not expected. You will generally have about 30–45 minutes of homework each day you have class. If you find yourself spending significantly more time, you are encouraged to discuss the matter with your teacher. Some longer assignments will take longer (maybe much longer!) than 30 minutes, but they will typically not be due the next day.

Assessment

You will be assessed in a number of different ways, including individual paper/pencil quizzes, oral assessments, projects, presentations, and classwork. You also will have numerous problem sets and free response questions in which we expect you to maintain absolute academic integrity.

Materials

You will need dedicated space for notes which you will bring with you to class every day, and a folder for handouts and homework. You will also need writing utensils. This class will utilize a graphing calculator as well as the software available on your laptops to complete assignments.

Single-Variable Calculus

Overview

Our study of calculus will focus on methods for dealing with arbitrarily large or arbitrarily small numbers — infinity or the infinitesimal. This intensive course in the calculus of one variable will include limits, differentiation, maxima and minima, and the chain rule for polynomials, rational functions, trigonometric functions, and exponential functions, as well as an introduction of integration with applications to area and

volumes of revolution. Students' background in matrices will be combined with their new calculus skills to solve basic differential equations. Applications to medicine, physics, economics, and more will be considered. Proofwork will also be emphasized strongly, both in terms of justifying the methods we practice and examining important results, such as the mean value theorem.

These are the questions that will occupy us intensely in our class. Abstraction, conceptual clarity, and symbolic complexity are juxtaposed seamlessly with practical exigencies of computation and approximation, and the engineering aesthetic for designing and constructing schemes that work.

Students in small groups will be faced with a series of modeling challenges, opportunities to learn the salient features of an application area and apply calculus concepts to clarify the relationships between interacting components. The resulting class presentations will help hone our skills at communicating mathematics effectively, bringing the right tools to bear, and using appropriate symbolic and graphical representations. This theme will be further expanded as part of year-end individual projects. Students are given the opportunity to find the mathematics we've been studying anywhere in the world they choose to look, from sports to animal feeding patterns, from domes and arches to rocket propulsion.

Goals

- Develop knowledge of the procedures and mathematical underpinnings of calculus
- Develop skills in five process standards of mathematics: problem solving, reasoning and proof, communication, representations, and connections
- Explore mathematical concepts in ways that help students develop deep understanding of concepts
- Develop attitudes of confidence, curiosity, persistence, and inventiveness in relation to mathematics
- Improve students' ability to solve problems of varying complexity, both independently and collaboratively

Homework

Homework serves a variety of purposes, such as practicing skills, reflecting on newly learned concepts, extending ideas from class work, introducing or previewing new concepts, and working on long-term assignments and projects. Homework is an opportunity to explore ideas and take risks, and perfection is not expected. You will generally have about 45 minutes of homework per 80-minute period. If you find yourself spending significantly more time, you are encouraged to discuss the matter with your teacher.

Assessment

You will be assessed in a number of different ways, including individual paper/pencil quizzes and tests, oral assessments, projects, presentations, and classwork. You will be expected to complete a self-evaluation addressing the following areas:

- academic skills (participation, in-class productivity, study/homework habits, organization)
- mathematical process skills (problem solving, reasoning, connections, communication, and representations)
- mathematical content skills (specific to the areas we study that semester — see Canvas for learning outcomes)

Materials

You will need a dedicated math notebook, which you will bring with you to class every day, and a folder or other receptacle for handouts and homework. You will also need writing utensils. (You may bring a graphing calculator if you like; however, you will be able to do all assignments with the software available on your laptops. If you plan to take an AP Calculus exam, it is highly recommended that you procure an nSpire calculator. Note: The nSpire CAS is a more powerful calculator with greater functionality. It can be used on the AP and SAT but it cannot be used on the ACT.)

Individual Assistance

Students should seek assistance from us, from their peers, and from other teachers. It is our belief that there is merit in having the grit and tenacity to work through problems on one's own at times. However, it is also our

belief that working through problems with others (peers and teachers) is always a rich experience. We urge students to come talk to us about concerns, interests, or anything else that seems relevant.

LIMITS	DIFFERENTIAL EQUATIONS	SEQUENCES AND SERIES
Definition of a limit Precise definition of limit- Epsilon-delta proofs Limit laws Continuity Limits at infinity — end behavior L'Hôpital's rule	Slope Fields Euler's Method Separable equations Predator-Prey Systems Logistical Growth	Sequences Series Recursive and explicit formulas Tests of convergence Taylor polynomials Power series

DERIVATIVES	INTEGRALS
Derivatives of polynomial, rational, exponential, logarithmic, and trigonometric functions Product and quotient rules Chain rule Implicit differentiation Rates of change Applications of derivatives Linear approximation, extrema and inflection points, related rates and optimization Mean value theorem	Area under a curve Fundamental theorem of calculus Antiderivatives Area between curves Volume by revolution, volume by section Integration techniques like integration using substitution, trigonometric substitution, Integration by parts

Multivariable Calculus

Overview

Our study of multivariable calculus will build upon techniques learned in Single-Variable Calculus, extending the realm of applications to problems in two, three, and more dimensions. The course provides a venue for students to combine and extend many of the mathematical techniques that they have learned in previous math courses, and to apply those techniques to problems of greater complexity. Students will generalize their knowledge of differentiation and integration to functions of several variables. In particular, students will learn to work with and visualize two- and three-dimensional functions, vectors, and vector fields. We will study techniques for working in *n* dimensions, including parametric equations, polar coordinates, vectors and vector operations, directional derivatives and gradients, multiple integration, line and surface integrals, Taylor's expansion in *n* dimensions, and Green's, Stokes' and Gauss' Theorems. Whenever possible, students will work with physical models or computer models to aid in visualization and will solve problems taken from real-world applications. We will also spend time honing formal mathematics skills by studying and performing proofs and presentations.

Goals

Through study of multivariable calculus, students will:

- expand mathematical reasoning skills and aptitude for working on problems of increasing complexity
- develop spatial sense and ability to visualize in three dimensions
- develop mathematical approaches for analyzing problems of higher dimensions
- understand relationships that occur in problems of higher dimensions and generalize the tools that were used in one dimension

- learn about applications of calculus in fields such as chemistry, physics, engineering, and statistics

Homework

Homework will generally be assigned weekly. Much of learning in mathematics occurs through reflection and analysis of difficult problems, so hard problems will usually be included in the homework assignments. Students will be challenged to work on problems that involve greater scope and depth and that require the combining of multiple mathematical techniques. Students should begin work on homework soon after it is assigned to allow time for reflection, which will in turn lead to questions in class and during office hours and tutorial. Homework will include problem sets, assignments using Mathematica, and creative projects throughout the year.

Materials

Students will need to bring with them to class every day:

- a dedicated notebook or section of a binder to record class notes and a folder to store handouts
- writing implements
- blank paper to be used for in-class work and assignments
- a computer with Mathematica installed
- enthusiasm and eagerness to learn

Assessment

Students will be expected to acquire deep understanding and mastery of the concepts covered and a certain proficiency in the techniques we use. Assessments will be made through a number of modalities, including:

- classroom discussion and participation
- assignments
- oral presentations to the class or one-on-one
- projects
- quizzes and tests

Linear Algebra

Overview

Linear algebra is the branch of mathematics concerning the properties of matrices. Linear algebra has wide-ranging applications in abstract algebra, functional analysis and many natural sciences and social sciences; it is particularly malleable to the student's interests, whether they be theoretical, applied, or computational. Our approach this year will give students the opportunity to acquire a number of communication and analysis skills that will benefit them in further math classes. The notions we consider can be subsequently bent to their further goals in a remarkable variety of fields, and we will periodically discuss specific examples of applications. These concepts will include vectors and vector spaces, linear transformations and matrix representations, determinants, linear dependence and independence, subspaces and bases and dimensions, orthogonal bases and projections, Gram-Schmidt orthogonalization, Cramer's Rule, linear models and least-squares problems, eigenvectors and eigenvalues, and singular value decomposition.

Goals

Our study of linear algebra will enable students to:

- understand both the geometrical relevance of matrices and vectors as well as the algebraic structures they form
- work with abstract objects, notably vector spaces
- read and discuss mathematical texts
- prove mathematical facts rigorously
- communicate mathematical ideas precisely and constructively discuss others' work, including proofs

- apply linear algebra to a variety of problems in physics, computer science, data analysis, and more

Homework

Homework will generally be assigned daily, and the main purpose of the homework is to prime students to participate in the next class in an active manner. Much of learning in mathematics occurs through reflection and analysis of difficult problems, so hard problems will usually be included in the homework assignments. Students will be challenged to work on problems that involve greater scope and depth and that require the combining of multiple mathematical techniques. Students should begin work on homework soon after it is assigned to allow time for reflection, which will in turn lead to questions in class and during office hours and tutorial; however, due to the difficulty of portions of the assignments, students should not expect to complete every assignment. Students should engage with every prompt from the homework and spend a reasonable amount of time working.

Materials

Students will need to bring with them to class every day:

- a dedicated notebook or section of a binder to record class notes and a folder to store handouts
- writing implements
- blank paper to be used for in-class work and assignments
- enthusiasm and eagerness to learn

Assessment

Students will be expected to acquire deep understanding and mastery of the concepts covered in the class, as well as a certain degree of proficiency in the techniques we use. Assessments will be made through a number of modalities, including:

- classroom discussion and participation
- assignments
- oral presentations to the class, specifically of proofwork
- one-on-one conversations
- projects
- quizzes and tests

Spanish 1

Goals

Students will understand the benefits of learning a second language as well as some of the skills and practices needed for the successful acquisition of Spanish, broadening perspectives about communities both near and far. Students will learn to introduce themselves with regional and social contexts in mind. They will be able to describe their passions and interests and develop an understanding of how people in other cultures spend some of their leisure time. Students will be able to describe themselves and their friends. As they explore cultural traditions related to homes and families from the Spanish-speaking world, students will describe their own families, roles, activities in their communities. As the year progresses, students will construct and respond to questions, ask for what they need, and respond to the needs of others. Students also become storytellers, using their newly acquired language to retell and adapt stories, both real and imaginary. By the end of the year students should aim to reach the Novice High proficiency range set by the American Council on the Teaching of Foreign Languages (ACTFL).

Overview

Spanish 1 is designed to build a foundation in the Spanish language, with a dual emphasis on comprehension and communication. Students begin by identifying cognates and patterns in written and spoken language. They

will build their vocabulary and learn to communicate, initially with one- or two-word answers and progressing to phrases and simple sentences. Comprehensible and repetitive exposure to high-frequency structures is provided through visuals, physical activities, stories, readings, and conversations about students and their lives, while making space for comparisons and connections with the cultures of Spanish-speaking countries.

Materials
A wide range of print and electronic materials, including but not limited to short novels, music, online vocabulary builders, grammar review sites, and authentic resources.

Homework
Homework is assigned on a weekly basis and includes a selection of listening and reading activities, vocabulary practice, grammar review, cultural resources and more. Students select which activities to complete based on need and interest. Students reflect on their learning in their journals, demonstrating understanding of the work completed. Feedback is provided on a regular basis and students are encouraged to review and edit as necessary.

Assessment
Students will be asked to participate daily in class, demonstrating comprehension of activities, discussions, and stories through frequent questions, retells, and rewrites. Quizzes and journals will allow students to demonstrate vocabulary knowledge and understanding of grammar. Summative assessments will include, but are not limited to, collaborative and individual projects, both research and task-based, story rewrites and in-class discussions.

Spanish 2

Overview
The Spanish 2 course is designed for students to continue developing the skills and practices needed for the successful acquisition of the Spanish language, broadening perspectives about communities both near and far. Students continue their study of Spanish by further expanding their knowledge of key vocabulary topics and grammar concepts. They comprehend listening and reading passages more fully and express themselves more meaningfully and with greater spontaneity in both speaking and writing.

Goals
By the end of the year, students should aim to reach the Intermediate low/mid proficiency range as set by the American Council on the Teaching of Foreign Languages (ACTFL). These include the ability to:

- participate in conversations on a number of familiar topics using simple sentences
- handle short social interactions in everyday situations by asking and answering simple questions
- verbally present information on most familiar topics using a series of simple sentences
- write on a wide variety of familiar topics using connected sentences to form some simple paragraphs
- understand the main idea in short, simple messages and presentations on familiar topics
- understand the main idea of simple conversations that are overheard
- understand the main idea of texts related to everyday life and personal interests or studies
- be aware of subtle cultural difference in familiar situations and adjust language or behavior for specific audiences
- analyze and explain relationships between familiar products, practices, and perspectives

Materials
These include a wide range of Spanish books, newspapers and journals, podcasts and interviews, short stories, poems, songs, vocabulary practice and grammar review websites, and documentaries and short films.

Homework
Students can expect 90 minutes of homework per week. Ideally completed on days class does not meet. Homework is designed to directly support what is learned in class and will include material related to vocabulary, grammar, and cultural studies. Assignments will range from creative projects to vocabulary and grammar practice. Students are encouraged to think critically about the language structures being used and bring questions to class for clarification and discussion. Daily vocabulary practice is also highly encouraged. Students are responsible for completing and submitting all homework assignments on time, before class on the days they are due.

Assessment
Students will be asked to participate daily in class, demonstrate comprehension of activities, discussions and stories through frequent questions, re-tells and re-writes. Quizzes and journals will allow students to demonstrate vocabulary knowledge and understanding of grammar. Summative assessments will include, but are not limited to, collaborative and individual projects (both research and task-based), story re-writes, and in-class discussions.

Spanish 3

Overview
Through individual and collaborative learning activities, members of the Level 3 class will understand how life experiences shape identity, discuss cultural celebrations in Spanish-speaking countries, consider the relationship between life and the arts, discuss perspectives on travel, explore the impact of technology on our lives, and describe some environmental issues that pose challenges to society.

Students will review and master the preterit, imperfect, and present perfect tenses, while implementing the present subjunctive mood in various contexts. They will review the future and conditional tenses and use them to describe predictions and hopes. Students will also learn to express desires and give instructions using the Imperative, and will also cover the passive voice and impersonal statements. Along with building knowledge in these content areas, the class will focus on developing student's skills in Interpersonal Communication, Presentational Speaking and Writing, and Interpretive Reading and Listening.

Goals
Students in Spanish 3 will review and strengthen their understanding of essential Spanish grammar and build on the foundation of previous courses. They will expand their vocabulary and increase in fluency through frequent conversational practice and presentations, readings, creative projects and research on cultural topics.

Throughout the year, students should progress through the standards of the American Council on the Teaching of Foreign Languages (ACTFL). They should increase their ability to express needs and wishes, write increasingly cohesive passages, and present clearly and articulately using complex sentences. Their higher-level listening and reading comprehension should allow them to identify main ideas and comment on what they hear, and identify and describe key points in authentic articles.

Materials
A wide range of Spanish books, Spanish language newspapers and journals, podcasts and interviews, short stories, poems, songs, vocabulary practice and grammar review websites, and presentations, documentaries, and short films. Students will also have the option to utilize electronic or physical journals throughout the year.

Homework
Students will be assigned homework most classes. This work often includes reading and viewing assignments, vocabulary practice, and grammar review in preparation for upcoming classes. Completing these assignments in

a timely manner is essential for effective use of class time, consistent exposure to the language, and long-term acquisition. It is recommended that assignments are completed on days we do not meet as a class.

Assessment
Students will be asked to keep a reflection journal, as well as participate daily in class. Summative assessments will include but are not limited to projects, compositions, and in-class and online debates and discussions.

Spanish 4

Overview
The Spanish 4 curriculum refines and enhances students' language skills, developing their ability to communicate effectively in oral and written Spanish within a thematic context. Students move toward less structure and more cumulative knowledge and self-initiated responses. Students will broaden their understanding of cultures from Spanish-speaking communities around the world, relating them to their own experiences. The course will focus on six essential themes: global challenges, beauty and aesthetics, families and communities, personal and public identities, contemporary life, and science and technology. Students will explore each theme through written and audio resources, acquire new vocabulary, and practice writing and speaking formally and informally. The course emphasizes the use of language for active communication and is conducted entirely in Spanish.

Goals
As we progress through the year we will search for ways to communicate thoughts and opinions in more detailed and complex ways. Students will understand that there are multiple ways to express the same idea and that linguistic risk takes courage but is essential to growth. Throughout the year, students will think critically and express themselves clearly about relationships, quality of life and how individuals and communities define it, the arts and how they reflect the history and culture of a people, and regional expressions and how language defines group identity. Each semester students will choose a Spanish-speaking country through which they will explore our units of study, which will lead to a greater understanding and appreciation of perspectives. By the end of the year students should aim to reach the Intermediate High proficiency range set by the American Council on the Teaching of Foreign Languages (ACTFL).

Materials
A wide range of Spanish books, Spanish language newspapers and journals, podcasts and interviews, short stories, poems, songs, vocabulary practice and grammar review websites and presentations, documentaries, and short films. Students will be provided with physical journals for use throughout the year and are expected to maintain them.

Homework
Students will be assigned homework most classes. This work often includes reading, listening, and viewing assignments, vocabulary practice, and grammar review in preparation for upcoming classes. Completing these assignments in a timely manner is essential for effective use of class time, consistent exposure to the language, and long-term acquisition. It is recommended that assignments are completed on days we do not meet as a class to provide more frequent exposure.

Assessment
Students will be asked to keep a reflection journal, as well as participate daily in class. Summative assessments will include but are not limited to projects, compositions, and in-class and online debates and discussions.

Advanced Spanish Communication

Overview
Advanced Spanish Communication is a seminar conducted in Spanish, designed to help students develop a dynamic range of advanced oral communication skills and strategies and acquire the literacy skills necessary to be effective communicators with native language speakers and to interact closely with native-speaking communities both in and outside the school community. Students develop the communicative skills and oral expressiveness necessary to engage in a variety of real-life situations, and they apply those skills to issues facing Spanish-speaking communities around the world.

Goals
Through close readings and analysis of colloquial texts and conversations, as well as individual and group practice activities, students develop proficiency in Spanish language mechanics and learn skills necessary to conduct research and interpersonal interviews, deliver an original speech, write on demand, and interact with native speakers with an awareness of structure, organization, mechanics, and word choice in Spanish.

Materials
A wide range of Spanish books, Spanish language newspapers and journals, social media, blogs, podcasts and interviews, short stories, poems, songs, vocabulary practice and grammar review websites, documentaries, and short films.

Homework
Students will be assigned homework most classes. This work often includes reading and viewing assignments, vocabulary practice, and grammar review in preparation for upcoming classes. Completing these assignments in a timely manner is essential for effective use of class time, consistent exposure to the language, and long-term acquisition. It is recommended that assignments are completed on days we do not meet as a class.

Assessment
Students will be asked to keep a vocabulary journal and participate daily in class. Summative assessments will include but are not limited to projects, compositions, and in-class and online debates and discussions.

Advanced Spanish: Literature

Overview
This course, through literature, explores and attempts to negotiate the polemic in Spanish culture concerning the conflicts and coexistences between Christians, Muslims, and Jews on the medieval Iberian Peninsula. The medieval texts discussed will challenge the often-simplistic views expressed in contemporary popular culture of intercultural relations in medieval Spain and al-Ándalus.

Goals
- To develop students' knowledge of medieval Iberian literature and its relationships with other literary traditions
- To appreciate the importance of religion in several canonical and non-canonical medieval Iberian literature works
- To develop students' knowledge of critical theories
- To familiarize students with various opinions and criticism of the genres of the works studied
- To develop students' critical thinking skills as well as oral and written expression
- To establish a solid foundation to do further work on medieval literature

Materials

Cantar de mio Cid
Milagros de Nuestra Señora
Celestina

Homework

Assignments will be listed on Canvas. The reading of all texts before class is mandatory.

Assessments

- *Active* and *consistent* participation during class meetings. Unexcused absences and tardiness will be reflected under the "Initiative and Self–Direction" tab of the "Habits of Learning" section.
- Five (5) semester comments (at least 175 words or two to three minutes) to be posted on the Canvas discussion board, according to the course schedule and according to criteria listed.
- One (1) three-page summative written assessment.
- One (1) three to five-minute summative oral assessment.
- One (1) final summative written assignment of at least five pages *and* presentation.

Advanced Spanish: Society and Culture of Spain

Overview

This course provide students with an overview of the key events in recent Spanish history that have shaped present-day society. The course introduces students to the Second Republic and the military coup that resulted in civil war and a 40-year dictatorship. It also considers how the conflict has been remembered through the dictatorship and Spain's transition to democracy. Using a variety of resources, including literary and non-literary texts, documentaries and film, students will further their understanding of Spanish society while building vocabulary, idiomatic expressions, and grammatical control.

Goals

- Develop an awareness and sensitivity to different cultures
- Discuss, identify and reflect on the history, customs, values and other cultural aspects of Spain
- Analyze some of the various regional, linguistic, political, and immigrant cultures of Spain and their contributions to Spanish culture
- Describe and analyze the perceptions, viewpoints, and life experiences of people in Spain
- Compare and contrast cultural aspects (including morals, biases, social norms, and world views) of Spain with those of the United States

Materials

A selection of Spanish books, plays, movies, documentaries, short stories, poems, and songs from the 20th and 21st centuries. Students should bring their journal and computer to each class

Homework

Ninety minutes of homework will be assigned weekly. Homework often includes reading, audiovisual resources, vocabulary practice, and grammar review in preparation for upcoming classes. Completing these assignments in a timely manner is essential for effective use of class time, consistent exposure to the language, and long-term acquisition. It is recommended that assignments be completed on days we do not meet as a class to provide more frequent exposure to the language. Students might also break assignments into smaller chunks when there are 3 or more days between classes.

Assessment

- Daily participation in class discussions

- Semester-long reflection journal
- Summative assessments, including but not limited to projects, compositions, and in-class and online debates and discussions

Chinese 1

Overview

The Chinese program provides the students opportunities to incorporate communication, collaboration, and technology skills in learning the Chinese language and its rich culture. In Beginning Chinese, students focus on culturally appropriate oral communication in Mandarin while utilizing pinyin, the Chinese phonetic system, to facilitate the sound transcription of the tonal language. Reading, writing, and typing in simplified characters (with references to their traditional counterparts) progress in parallel with oral skills development. Through each thematic unit — starting from self, family, and school and expanding to community and world — students will learn vocabulary, language patterns, dialogues, and culture topics, to create group presentations and to form conversations for real-life scenarios and functions. Foundational information of geography, history, pronunciation, classroom expressions and Chinese characters are introduced and reiterated among all the units.

Goals

Chinese 1 is the beginning Chinese program at Nueva's Upper School. The primary focus of this program is to immerse students in oral communication settings that bring forth an essential understanding of the Chinese culture and people. Culturally appropriate manners and expressions are woven into each unit to help students understand and connect to the Chinese tradition. This course prepares the students to achieve an ACTFL proficiency level of Novice-mid to Novice-high across interpretive, interpersonal, and presentational communications at the end of the first year of study.

Homework

Homework is assigned after each class meeting to reinforce learning. Students are expected to spend 30–45 minutes per class meeting on homework or self-study. Online resources and printed handouts will be distributed to the students for listening, speaking, reading, writing, and typing assignments. A variety of online tools will be used for homework and projects. Each assignment strengthens the study of the current lesson and prepares for upcoming units, and should be completed accurately and on time to ensure a smooth learning flow. Students should contact the instructor in advance for any due date extensions or problems encountered.

Assessment

Oral, written, and typing assessments will be given at the end of each topic and subunit. Additionally, class participation, individual/collaborative projects, and presentations will be used to gauge students' progress.

Materials & Resources

- *Zhongwen Bu Mafan 1*, by Terry Waltz, Squid for Brains, 2014
- *Zhēn Bàng!* Level 1, Units 1–4 EMC Publishing LLC
- *Integrated Chinese*, Level 1 Part 1, 4th Edition | Cheng & Tsui

Chinese 2

Overview

The Chinese program provides the students opportunities to incorporate communication, collaboration, and technology skills in learning the Chinese language and its rich culture. Chinese 2 starts with an expansion of vocabulary and sentence structures built on top of Chinese 1 (or equivalent) content through dialogue creation,

reading, listening, and writing. This course will follow roughly Lessons 6–13 *on Integrated Chinese Level 1* (Parts 1 and 2) and cover topics including, but not limited to, making appointments, studying Chinese, school life, shopping, transportation, weather, dining, and directions. In addition to colloquial Mandarin, students are exposed to more formal written language with stories and songs. While advancing in reading and creative writing, students in Chinese 2 dive deeper into culture comparisons and 21st century world citizenship through group projects and comic/drama production.

Goals

Chinese 2 is the second-year Chinese program. Its primary focus is to further enhance students' Chinese language skills in more complex scenarios and language contexts that require critical thinking and innovation skills. Students are en route to solidifying the habit of independent study and collaborative learning in order to become lifelong learners of the Chinese language. This course prepares the students to achieve a proficiency level of Novice-high to Intermediate-low across interpretive, interpersonal, and presentational communications (based on the ACTFL standards) at the end of the school year.

Homework

Homework is assigned after each class meeting to reinforce learning. Students are expected to spend approximately 40 minutes on homework after each class meeting, but individual differences are recognized. Online resources and digital and printed materials will be distributed to the students for listening, speaking, reading, and writing assignments. The purpose of each assignment is to strengthen the study of the current lesson and to prepare for upcoming units; it should be completed on time with accuracy to ensure a smooth learning flow.

Assessment

Written assessments will be given at the end of each sub-unit and 2 or 3 oral assessments will be given each semester. Additionally, quizzes, class preparation and participation, individual/collaborative projects, and essays are used to gauge students' progress. If a student needs more time to complete homework, the student should contact the instructor before the homework is due.

Materials & Resources

Integrated Chinese, Level 1 Part 1 & Part 2, 3rd Edition | Cheng & Tsui
Zhēn Bàng! Level 1, Units 3–6 | EMC Publishing LLC

Chinese 3

Overview

The Chinese program provides the students opportunities to incorporate communication, collaboration, and technology skills in learning the Chinese language and its rich culture. The Level 3 Chinese course is composed of themes and units about decision-making and planning. Topics include, but are not limited to, directions, seeing a doctor, dating, living space, sports, and travel. The course will roughly follow Lessons 13–20 *in Integrated Chinese* Level 1 (Part 2) and loosely *Zhēn Bàng!* Level 1, Units 4–6. Correlated cultural topics are introduced with each unit for further exploration and comparison. In addition to the new vocabulary and sentence structures introduced in each unit, the students will be further immersed in an authentic environment through Chinese short stories, songs, news segments, TV series, and animated videos.

Goals

Chinese 3 is the third-year Chinese program. Its primary focus is to equip the students with expressions, styles, and language structures of higher complexity in both oral and written communication for various purposes. Students will learn to further differentiate between speaking and writing the words and phrases essential for higher-level social functions. This course prepares the students to achieve a proficiency level of Intermediate-

low to Intermediate-mid across interpretive, interpersonal, and presentational communications (based on the ACTFL standards) at the end of the school year.

Homework

Homework is assigned after each class meeting to reinforce learning and daily communication in Chinese. Students are expected to spend approximately 40 minutes on homework after each class meeting, but individual differences are recognized. Online resources, digital files, and printed materials will be distributed to the students for listening, speaking, reading, and writing assignments. The purpose of each assignment is to strengthen the study of the current lesson and to prepare for upcoming units; it should be completed on time with accuracy to ensure a smooth learning flow. If a student needs more time to complete any assignment, the student should contact the instructor before the assignment is due.

Assessment

Written assessments will be given at the end of each sub-unit. Additionally, quizzes, class preparation and participation, individual/collaborative projects, and essays are used to gauge students' progress.

Materials & Resources

Integrated Chinese, Level 1 Part 2, 3rd Edition | Cheng & Tsui
Zhēn Bàng! Level 1, Units 4–6 | EMC Publishing LLC

Chinese 4

Overview

The Chinese program provides the students opportunities to incorporate communication, collaboration, and technology skills in learning the Chinese language and its rich culture. The Level 4 Chinese course comprises themes and units about modernization and environmental issues. Correlated cultural topics are introduced with each unit for further exploration and comparison. In addition to regular language units, students will study biographies, news segments, crosstalk, and movies to manage a self-paced, individualized learning progress based on personal interests. Level 4 students will also conduct interviews and periodically publish bilingual newsletters in Chinese and English.

Goals

The primary focus of the fourth-year Chinese program is to guide the students in creative writing as well as formal speaking through a full immersion forum. Students will learn to lead discussions in Mandarin and brainstorm solutions for selected issues. This course prepares the students to achieve a proficiency level of Intermediate-mid to Intermediate-high (based on the ACTFL standards) across interpretive, interpersonal, and presentational communications at the end of the school year.

Homework

Homework is assigned after each class meeting to reinforce learning and daily communication in Chinese. Students are expected to spend at least 45 minutes per class meeting on homework or self-study. Online resources and digital and printed materials will be assigned for listening, speaking, reading, writing, and typing assignments. A variety of online tools will be used for homework and projects. Each assignment strengthens the study of the current lesson and prepares for upcoming units, and should be completed accurately and on time to ensure a smooth learning flow. Students should contact the instructor in advance for any due-date extensions or problems encountered.

Assessment

Oral, written, and typing assessments will be given at the end of each topic and subunit. Additionally, class participation and individual/collaborative projects and presentations will be used to gauge students' progress.

Materials & Resources

- *Zhēn Bàng!* Level 3| EMC Publishing LLC
- *Integrated Chinese*, Level 2 Part 1, 4th Edition | Cheng & Tsui
- Chinese Biographies, http://chinesebiographies.cheng-tsui.com
- Learning Chinese Language and Culture from Movies | LiveABC

Chinese 5

Overview

The Chinese program provides students with opportunities to incorporate communication, collaboration, and technology skills in learning the Chinese language and its rich culture. The Level 5 Chinese course is composed of themes and units about the dynamics among individual identity, personal goals, cultural heritage, social and economic impacts, and global concerns. Correlated cultural topics are introduced with each unit for further exploration and comparisons. In addition to regular language units, students will study readers about Chinese culture, TV programs, current events, and movies to conduct a self-paced, individualized learning based on personal interests. Level 5 students will also conduct interviews and create news videos and talk shows about current events in Chinese periodically.

Goals

Chinese 5 is the fifth-year Chinese program. Its primary focus is to further explore topics related to the Chinese culture, history, geography, education system, economic growth, and modernization in order to develop a wider and deeper understanding of the Chinese speaking communities and to bridge the differences between the East and the West. Students in Chinese 5 will continue to lead discussions in Mandarin, brainstorming solutions for issues of interests and debating various topics. This course prepares the students to achieve a proficiency level of Intermediate-high to Advanced-low across interpretive, interpersonal, and presentational communications (based on the ACTFL standards) at the end of the school year.

Homework

Homework is assigned after each class meeting to reinforce learning and daily communication in Chinese. Students are expected to spend 40 minutes on homework after each class meeting, but individual differences are recognized. Online resources and digital and printed materials will be distributed to the students for listening, speaking, reading, writing, and typing assignments. The purpose of each assignment is to strengthen the study of current lesson and to prepare for upcoming units; therefore, it should be completed on time with accuracy to ensure a smooth learning flow. If a student needs more time to complete an assignment, the student should contact the advisor before the assignment is due.

Assessment

Written assessments will be given at the end of each unit. Additionally, quizzes, class preparation and participation, individual/collaborative projects, presentations, and written essays are used to gauge students' progress.

Materials & Resources

Chao Yue: Advancing in Chinese | Columbia University Press
Readings in Chinese Culture Series, Vols. 2–4 | Cheng & Tsui
http://cctv4america.cntv.cn
http://tv.cntv.cn/live

Japanese 2

Overview

Building on Japanese 1 or the equivalent, Japanese 2 is a yearlong course that develops students' reading, writing, speaking, and listening skills in Japanese through a systematic introduction and integration of grammar, vocabulary, kanji, and culture, using a communicative approach informed by ACTFL's five C's of foreign language education (Communication, Cultures, Connections, Comparisons, and Communities). Assignments and assessments emphasize the three basic modes of communication: the interpersonal, the interpretive, and the presentational. For example, students are required to speak Japanese through short conversations and role-plays, to read and analyze authentic materials in Japanese such as diaries and films, and to produce short oral presentations and written essays in Japanese. In addition, students study important topics in Japanese culture, such as Japanese food, geography, and history. The course roughly follows the second half of *Genki I*, but it also uses a number of other textbooks and resources, such as *Adventures in Japanese* (Volumes 1–2) and authentic materials taken from Japanese literature, film, and popular culture (i.e., manga, music, and television). Students learn to read and write approximately 100 new kanji (Chapters 1–6 of *Kanji Look and Learn*). Students can also deepen their language skills and cultural knowledge through an optional trip to Japan during the spring semester.

Goals

The primary goal of this course is to improve students' reading, writing, speaking, and listening skills in Japanese so that students can function in a variety of real-life settings and situations in Japanese. The aim is for students to achieve Novice Mid to Novice High proficiency in Japanese, as defined by the American Council on the Teaching of Foreign Languages (ACTFL). At the same time, this course aims to deepen students' knowledge and understanding of various aspects of Japanese culture through the use of Japanese, enabling them to make connections and comparisons between Japanese and other languages, cultures, and courses, developing their critical thinking skills and helping them become global citizens. Finally, this course strives to make students lifelong learners of Japanese by connecting them to a larger community of Japanese speakers, both inside and outside of school, and by making them more comfortable and confident expressing themselves in Japanese.

Homework

Homework is essential for reviewing and reinforcing concepts learned in class. For this reason, students will be assigned homework on a regular basis through the online learning management system Canvas. Students are expected to spend at least 30 minutes per class meeting on homework or self-study. Homework may include, but is not limited to, workbook exercises, *kanji* practice sheets, questions designed by the instructor, and online exercises. From time to time, students may be asked to do other tasks at home, such as preview or review the textbook or other materials, study online resources, and prepare for individual or group projects. Late or incomplete homework assignments will have a negative impact on a student's final grade. If a student is having trouble with homework or needs more time to finish it, he or she must contact the instructor before class time, preferably at least one day before. Otherwise the homework will be counted as late or incomplete.

Assessment

Students will be assessed regularly using a standards-based grading template that is available on Canvas. This template covers three main categories: content knowledge, skills and practices, and habits of mind. For certain assignments, such as projects and presentations, students will be given more specific guidelines and rubrics. Formal assessments may include, but are not limited to:

- tests and quizzes (written, oral, and aural)
- homework and other assignments
- classroom activities
- projects
- presentations

Students will receive regular oral and written feedback on their progress and performance. There will also be chances for self-assessment and self-reflection during the year.

Materials

Textbook

Banno, Eri, et al., eds. *GENKI: An Integrated Course in Elementary Japanese I (with CD-ROM)*. 2nd ed. Japan Times/Tsai Fong Books, 2011.

Workbooks

Banno, Eri, et al., eds. *GENKI: An Integrated Course in Elementary Japanese Workbook I*. 2nd ed. Japan Times/Tsai Fong Books, 2011.

Banno, Eri, et al., eds. *Kanji Look and Learn Workbook*. Tokyo: The Japan Times, 2009.

The instructor will provide additional instructional materials.

Japanese 3

Overview

Building on Japanese 2 or the equivalent, Japanese 3 is a yearlong course that develops students' reading, writing, speaking, and listening skills in Japanese through a systematic introduction and integration of grammar, vocabulary, kanji, and culture. Using a communicative approach informed by the five C's of foreign language education as defined by the American Council on the Teaching of Foreign Languages (Communication, Cultures, Connections, Comparisons, and Communities), this course enables students to achieve Novice High to Intermediate Low proficiency in Japanese. In assignments and assessments, equal emphasis is given to the three basic modes of communication: the interpersonal, the interpretive, and the presentational. For example, students are required to speak Japanese through activities and role-plays, to read and analyze authentic materials in Japanese such as folktales and films, and to produce short oral presentations and written essays in Japanese. In addition, students study important topics in Japanese culture through various language-based projects, including Japanese geography (a trivia project), Japanese folktales (a translation project), and Japanese food (a ramen project). The course focuses on the latter half of *Genki I* and the first half of *Genki II*, but it also uses a number of other textbooks and resources, such as Adventures in Japanese (Volumes 1–3) and authentic materials taken from Japanese literature, film, and popular culture (i.e., manga, music, and television). Students learn to read and write approximately 150 new kanji (Chapters 9–16 of *Kanji Look and Learn*). Students can also deepen their language skills and cultural knowledge through an optional trip to Japan during the spring semester.

Goals

The primary goal of this course is to improve students' reading, writing, speaking, and listening skills in Japanese so that students can function in a variety of real-life settings and situations in Japanese. The aim is for students to achieve Novice High to Intermediate Low proficiency in Japanese, according to ACTFL standards. At the same time, this course aims to deepen students' knowledge and understanding of various aspects of Japanese culture through the use of Japanese. The goal is for students to make connections and comparisons between Japanese and other languages, cultures, and courses, thereby developing student's critical thinking skills and helping them become global citizens. Finally, this course strives to make students lifelong learners of Japanese by connecting them to a larger community of Japanese speakers, both inside and outside of school, and by making them more comfortable and confident expressing themselves in Japanese.

Homework

Homework is essential for reviewing and reinforcing concepts learned in class. For this reason, students will be assigned homework on a regular basis through the online learning management system Canvas. Students are expected to spend approximately 90 minutes total on homework or self-study per week. Homework may

include, but is not limited to: workbook exercises, kanji practice sheets, and application exercises. From time to time, students may be asked to do other tasks at home, such as preview or review the textbook, study online resources, and prepare for individual or group projects. Late or incomplete homework assignments will have a negative impact on a student's final grade. If a student is having trouble with homework or needs more time to finish it, he or she must contact the instructor before class time, preferably 24 hours in advance. Otherwise the homework will be counted as late or incomplete.

Assessment

Students will be assessed regularly using a standards-based grading template that is available on Canvas. This template covers three main categories: content and knowledge, skills and practices, and habits of learning. For certain assignments, such as projects and presentations, students will be given more specific guidelines and rubrics. Formal assessments may include, but are not limited to:

- tests and quizzes (written, oral, and aural)
- homework and other assignments
- classroom activities
- projects
- presentations

Students will receive regular oral and written feedback on their progress and performance. There will also be chances for self-assessment and self-reflection during the year.

Materials

Textbooks

- Banno, Eri, et al., eds. *GENKI: An Integrated Course in Elementary Japanese I (with CD-ROM)*. 2nd ed. Japan Times/Tsai Fong Books, 2011.
- Banno, Eri, et al., eds. *GENKI: An Integrated Course in Elementary Japanese II (with CD-ROM)*. 2nd ed. Japan Times/Tsai Fong Books, 2011.
- Workbooks:
- Banno, Eri, et al., eds. *GENKI: An Integrated Course in Elementary Japanese Workbook I*. 2nd ed. Japan Times/Tsai Fong Books, 2011.
- Banno, Eri, et al., eds. *GENKI: An Integrated Course in Elementary Japanese Workbook II*. 2nd ed. Japan Times/Tsai Fong Books, 2011.
- Banno, Eri, et al., eds. *Kanji Look and Learn Workbook*. Tokyo: The Japan Times, 2009.

The instructor will provide additional instructional materials.

Japanese 4

Overview

Building on Japanese 3 or the equivalent, Japanese 4 is a yearlong course that develops students' reading, writing, speaking, and listening skills in Japanese through a systematic introduction and integration of grammar, vocabulary, kanji, and culture, using a communicative approach informed by ACTFL's five C's of foreign language education (Communication, Cultures, Connections, Comparisons, and Communities). Assignments and assessments emphasize the three basic modes of communication: the interpersonal, the interpretive, and the presentational. For example, students are required to speak Japanese through skits and oral exams, to read and analyze authentic materials in Japanese such as essays and travel guides, and to write advice columns and personal essays in Japanese. In addition, students study important topics in Japanese culture such as gift-giving, transportation, and letter-writing. The course roughly follows the first half of *Genki II*, but it also uses a number of other textbooks and resources, such as *Adventures in Japanese* (Volumes 2–3), *Nakama 1*, and authentic materials taken from Japanese literature, film, and popular culture (i.e., manga, music, and television). Students learn to read and write approximately 100 new kanji (Chapters 11–15 of *Kanji Look and Learn*). Students can also

deepen their language skills and cultural knowledge through an optional trip to Japan during the spring semester.

Goals

The primary goal of this course is to improve students' reading, writing, speaking, and listening skills in Japanese so that students can function in a variety of real-life settings and situations in Japanese. The aim is for students to achieve Intermediate Low to Intermediate Mid proficiency in Japanese, as defined by the American Council on the Teaching of Foreign Languages (ACTFL). At the same time, this course aims to deepen students' knowledge and understanding of various aspects of Japanese culture through the use of Japanese, enabling them to make connections and comparisons between Japanese and other languages, cultures, and courses, developing their critical thinking skills and helping them become global citizens. Finally, this course strives to make students lifelong learners of Japanese by connecting them to a larger community of Japanese speakers, both inside and outside of school, and by making them more comfortable and confident expressing themselves in Japanese.

Homework

Homework is essential for reviewing and reinforcing concepts learned in class. For this reason, students will be assigned homework on a regular basis through the online learning management system Canvas. Students are expected to spend at least 30 minutes per class meeting on homework or self-study. Homework may include, but is not limited to, workbook exercises, *kanji* practice sheets, questions designed by the instructor, and online exercises. From time to time, students may be asked to do other tasks at home, such as preview or review the textbook or other materials, study online resources, and prepare for individual or group projects. Late or incomplete homework assignments will have a negative impact on a student's final grade. If a student is having trouble with homework or needs more time to finish it, he or she must contact the instructor before class time, preferably at least one day before. Otherwise the homework will be counted as late or incomplete.

Assessment

Students will be assessed regularly using a standards-based grading template that is available on Canvas. This template covers three main categories: content knowledge, skills and practices, and habits of mind. For certain assignments, such as projects and presentations, students will be given more specific guidelines and rubrics. Formal assessments may include, but are not limited to:

- tests and quizzes (written, oral, and aural)
- homework and other assignments
- classroom activities
- projects
- presentations

Students will receive regular oral and written feedback on their progress and performance. There will also be chances for self-assessment and self-reflection during the year.

Materials

Textbook

Banno, Eri, et al., eds. *GENKI: An Integrated Course in Elementary Japanese II (with CD-ROM)*. 2nd ed. Japan Times/Tsai Fong Books, 2011.

Workbooks

Banno, Eri, et al., eds. *GENKI: An Integrated Course in Elementary Japanese Workbook II*. 2nd ed. Japan Times/Tsai Fong Books, 2011.

Banno, Eri, et al., eds. *Kanji Look and Learn Workbook*. Tokyo: The Japan Times, 2009.

The instructor will provide additional instructional materials.

Advanced Topics in Japanese

Overview

Building on Japanese 4 or the equivalent, Advanced Topics in Japanese is a yearlong course that develops students' reading, writing, speaking, and listening skills in Japanese through a topics-based study of grammar, vocabulary, kanji, and culture. Using a communicative approach informed by the five C's of foreign language education as defined by the American Council on the Teaching of Foreign Languages (Communication, Cultures, Connections, Comparisons, and Communities), this course enables students to achieve Intermediate High to Advanced Low proficiency in Japanese. Assignments and assessments emphasize the three basic modes of communication: the interpersonal, the interpretive, and the presentational. For example, students are required to do skits and speeches, to read and analyze authentic materials in Japanese, and to discuss advanced topics in Japanese. These topics change yearly, depending on student enrollment and interests. This year the topics include: popular culture, performing arts, poetry, sports, economics, and history. Possible projects include: writing a story manga, performing a comic monologue (rakugo), reading literature, and an individual research project. The course uses a variety of advanced Japanese textbooks and multimedia instructional materials (see **Materials** below). Students continue their study of kanji using the Kanji Look and Learn and Tobira: Power Up Your Kanji workbooks. Students can also deepen their language skills and cultural knowledge through an optional trip to Japan during the spring semester.

Goals

The primary goal of this course is to improve students' reading, writing, speaking, and listening skills in Japanese so that students can function in a variety of real-life settings and situations in Japanese. The aim is for students to achieve Intermediate High to Advanced Low proficiency in Japanese, according to ACTFL standards. At the same time, this course aims to deepen students' knowledge and understanding of various aspects of Japanese culture through the use of Japanese. The goal is for students to make connections and comparisons between Japanese and other languages, cultures, and courses, thereby developing students' critical thinking skills and helping them become global citizens. Finally, this course strives to make students lifelong learners of Japanese by connecting them to a larger community of Japanese speakers, both inside and outside of school, and by making them more comfortable and confident expressing themselves in Japanese.

Homework

Homework is essential for reviewing and reinforcing concepts learned in class. For this reason, students will be assigned homework on a regular basis through the online learning management system Canvas. Students are expected to spend approximately 90 minutes total on homework or self-study per week. Homework may include, but is not limited to, readings, online viewings, grammar exercises, kanji practice sheets, and questions prepared by the instructor. From time to time, students may be asked to do other tasks at home, such as preview or review the textbook, study online resources, and prepare for individual or group projects. Late or incomplete homework assignments will have a negative impact on a student's final grade. If a student is having trouble with homework or needs more time to finish it, he or she must contact the instructor before class time, preferably 24 hours in advance. Otherwise the homework will be counted as late or incomplete.

Assessment

Students will be assessed regularly using a standards-based grading template that is available on Canvas. This template covers three main categories: content and knowledge, skills and practices, and habits of learning. For certain assignments, such as projects and presentations, students will be given more specific guidelines and rubrics. Formal assessments may include, but are not limited to:

- tests and quizzes (written, oral, and aural)
- homework and other assignments
- classroom activities
- projects

- presentations

Students will receive regular oral and written feedback on their progress and performance. There will also be chances for self-assessment and self-reflection during the year.

Materials

Textbooks:

- Oka, Mayumi, et al., eds. *Tobira: Gateway to Advanced Japanese Learning Through Content and Multimedia.* Tokyo: Kurosio Publishers, 2009.

Additional Textbooks:

- Peterson, Hiromi; Naomi Hirano-Omizo; and Junko Ady, eds. *Further Adventures in Japanese: An Advanced Course, Suitable for AP Preparation*. Boston: Cheng & Tsui Company, 2009.
- Peterson, Hiromi; Naomi Hirano-Omizo; and Junko Ady, eds. *Strive for a 5: AP Japanese Practice Tests*. Boston: Cheng & Tsui Company, 2009.

Workbooks:

- Banno, Eri, et al., eds. *Kanji Look and Learn Workbook*. Tokyo: The Japan Times, 2009.
- Oka, Mayumi, et al., eds. *Tobira: Power Up Your Kanji*. Tokyo: Kuroshio Publishers, 2010.

Note: The instructor will provide additional instructional materials.

Special Programs

Physical Education

Program Overview & Offerings

The upper school Physical Education and Athletics program supports Nueva's core educational goals and helps students capture the social, emotional, and physical benefits of healthy competition. Students learn to enjoy lifelong physical benefits and overall fitness as a result of their participation. A variety of interscholastic sports and physical education classes is offered each year.

Graduation Requirement

Participation in two out of three seasons a year for all four years of high school

- Fall (September–November)
- Winter (November–February)
- Spring (February–May)

Students may choose one of these options in a season to fulfill their graduation requirement:

OPTION #1: Participation on a Nueva Interscholastic Team

We value and encourage student participation on Nueva athletic teams. Due to the significant commitment required of a Nueva team, students can fulfill their yearly two-season requirement through a *single* season of an interscholastic sport.

Interscholastic offerings for 2018–2019

- Girls' Volleyball (Fall)
- Girls' & Boys' Cross-Country (Fall)
- Girls' & Boys' Basketball (Winter)
- Girls' & Boys' Soccer (Winter)
- Boys' Tennis (Spring)
- Girls' & Boys' Swimming & Diving (Spring)
- Girls' & Boys' Track & Field (Spring)
- Girls' & Boys' Lacrosse (Spring — will run if we have sufficient student interest)
- Coed Golf (Spring)

OPTION #2: Enrollment in a Physical Education Class

Students may sign up for a Physical Education class held before or after school. These classes meet twice a week for 1–1.5 hours per session.

Physical education offerings for 2018–2019: Yoga, Sports Conditioning, General Conditioning, Weight Training, and Urban Hiking. Additional offerings are based on student interest.

OPTION #3: Outside Activity Credit

In order to be eligible for PE credit, a supervised outside activity must meet a minimum of two hours a week. An adult supervisor, other than a parent, must sign off on a student's activity. Students are required to fill out an Outside Activity form (including instructor and student signature, activity description, and participation dates) and upload to Canvas. Past examples of approved Outside Activity credit include horseback riding, rowing, club soccer, martial arts, personal training, and gymnastics. Please refer to Canvas for additional information on the PE requirement, class sign-ups, and announcements, and to access the Outside Activity form.

Grade 9 Science of Mind

Overview

Science of Mind is a core upper school course that continues the focus on social-emotional learning, an integral part of teaching and learning at Nueva through all grade levels. Drawing on content from a variety of disciplines and theories (mindfulness, psychology, counseling, identity development, wellness, social science, and embodiment practices), the course is grounded in scientific research on best practices. Science of Mind provides tools, skills, and information geared toward relevant issues facing adolescents and aims to develop balanced, resilient, well-rounded, compassionate people who will have a positive impact on the world.

Goals

Students will:

- expand their capacity to understand and empathize with others
- discern the qualities of healthy relationships and how to foster these types of relationships
- learn and apply skills for stress management and emotional well-being
- be able to articulate emotional states and learn tools for emotion management and regulation
- cultivate safe spaces for themselves and classmates
- gain skills to engage in difficult conversations
- reflect upon the connection between behaviors and wellness
- learn and incorporate mindfulness skills into daily living
- deepen their understanding of mental health and mental illness
- develop personal values that inform their sense of purpose, decision-making, and engagement with the world around them
- be able to apply what they learn to life beyond Nueva

Topics

- The neuroscience of stress
- Relaxation and stress management
- Community building
- Identity
- How to have challenging conversations
- Asking for help
- Sleep
- Mental health and mental illness
- Body image and disordered eating
- Procrastination, time management and motivation
- Sexual education
- Drug education
- Trip preparation

Homework & Assignments

Students will be asked to practice and apply the knowledge and skills that they learn in class to their lives.

Assessment

Students will be assessed based on their engagement and completion of course activities. Through narratives, each student will receive individualized feedback aimed at enhancing their social and emotional development.

Grade 10 Science of Mind/Engaged Citizenship

Overview

Science of Mind is a core upper school course that continues the focus on social-emotional learning, an integral part of teaching and learning at Nueva throughout all grade levels. Drawing on content from a variety of disciplines and theories (mindfulness, psychology, counseling, identity development, wellness, social science), the course is grounded in scientific research on best practices. Science of Mind provides tools, skills, and information geared toward relevant issues facing adolescents and aims to develop balanced, resilient, well-rounded and compassionate people who will have a positive impact on the world. Tenth-grade Science of Mind is partnered with our Engaged Citizenship course, which enables students to critically and compassionately engage in their communities while furthering their understanding of power, inequity, diversity, and liberation. The class blends key features of social justice education and social-emotional learning in order to best prepare students for life, work, and citizenship in an increasingly diverse and global society. The class is conceived of as a "brave space," where students learn to engage deeply with one another through dialogue, perspective-taking, listening, and trust-building. The course ultimately aims to foster students' ability and willingness to engage with others around complex issues and with oneself in an effort to create the kind of community and 21st century democracy we all seek.

Goals

Students will:

- learn what contributes to a brave space and work towards creating such a space for themselves and their peers
- deepen their ability to understand and empathize with others
- learn the qualities of healthy relationships and how to foster these types of relationships
- learn and apply skills for distress tolerance and stress management
- learn how to have difficult conversations
- learn and incorporate mindfulness skills into daily living
- understand what constitutes identity and how identity develops
- deepen their understanding of mental health and mental illness
- explore personal values that inform their sense of purpose, decision-making, and engagement with the world around them
- understand that a diversity of viewpoints benefits all and that dialogue and collaboration is necessary in order to be an effective learner and citizen
- deepen their capacity to engage with others on complex issues
- develop sense of agency and capacity to interrupt and change oppressive patterns and institutions within their communities and the nation
- look for transfer and application of skills beyond Nueva
- become literate in power

Topics

- Systems of power
- Personal values
- Community
- Body image and empowerment
- Storytelling
- Civil discourse
- The art and science of connection: the power of self-disclosure, authenticity and vulnerability
- Personal values
- Cognitive distortions and biases

- Mental health and mental illness
- Sexual education
- Alcohol & drug education/the science of addiction
- Stress management
- Open session

Homework & Assignments
Homework might include reading short articles or written reflections on topics discussed in class. Students will also be asked to practice the social and emotional skills that they learn in class.

Assessment
Students will be assessed based on their engagement and completion of course activities. Through narratives, each student will receive individualized feedback aimed at enhancing their social and emotional development.

Grade 11 Science of Mind

Overview
Science of Mind is a core upper school course that continues the focus on Social-Emotional Learning, an integral part of teaching and learning at Nueva throughout all grade levels. Drawing on content from a variety of disciplines and theories (mindfulness, psychology, counseling, identity development, wellness, social science and embodiment practices), the course is grounded in scientific research on best practices. Science of Mind provides tools, skills, and information geared toward relevant issues facing adolescents and aims to develop balanced, resilient, well-rounded and compassionate people who will have a positive impact on the world.

Goals
Students will:

- expand their capacity to understand and empathize with others
- consider the qualities of healthy relationships and how to foster these types of relationships
- learn and apply skills for stress management and emotional well-being
- be able to articulate emotional states and learn tools for emotion management and regulation
- cultivate safe and caring spaces for themselves and classmates
- gain skills to engage in difficult conversations
- reflect upon the connection between behaviors and wellness
- learn and incorporate mindfulness skills into daily living
- deepen their understanding of mental health and mental illness
- develop personal values that inform their sense of purpose, decision-making, and engagement with the world around them
- be able to apply what they learn to life beyond Nueva

Topics

- Care (for self and others); cultures of kindness
- Social psychology
- Sleep: what happens while you sleep, its benefits/value, and what happens when you aren't getting enough of it
- Sexuality, sexual health, and healthy relationships
- Processing around relationships, needs, societal norms, what makes for a healthy relationship
- Drug research projects
- Healthy decision-making
- Entering the postsecondary process

- Mindfulness and tools for personal balance
- Stress management, emotion regulation, and distress tolerance
- Social justice and advocacy
- Build on past conversations regarding vulnerability and openness
- Mental health

Homework & Assignments
Homework might include reading short articles, written reflections, watching a short video, or listening to a podcast on topics to be discussed in class. Students will also be asked to practice the social and emotional skills that they learn in class.

Assessment
Students will be assessed based on their engagement and completion of course activities. Through narratives, each student will receive individualized feedback aimed at enhancing their social and emotional development.

Grade 12 Science of Mind

Overview
Science of Mind is a core upper school course that continues the focus on Social-Emotional Learning, an integral part of teaching and learning at Nueva throughout all grade levels. Drawing on content from a variety of disciplines and theories (mindfulness, psychology, counseling, identity development, wellness, social science), the course is grounded in scientific research on best practices. Science of Mind provides tools, skills, and information geared toward relevant issues facing adolescents and aims to develop balanced, resilient, well-rounded and compassionate people who will have a positive impact on the world.

Goals
Students will:

- deepen their ability to understand and empathize with others
- learn the qualities of healthy relationships and how to foster these types of relationships
- learn and apply skills for distress tolerance and stress management
- better understand emotional states and learn tools for emotion management and regulation
- learn what contributes to a safe space and build safe spaces for themselves and classmates
- learn how to have difficult conversations
- understand behaviors that contribute to wellness
- learn and incorporate mindfulness skills into daily living
- understand what constitutes identity and how identity develops
- deepen their understanding of mental health and mental illness
- deepen their understanding of and learn skills for behavioral management
- develop personal values that inform their sense of purpose, decision-making, and engagement with the world around them
- look for transfer and application of skills beyond nueva

Content

- Exploration of strengths and goals for self, year, career, future, etc.
- Processing around the college process — conversations around personal experience and grade-wide experience; how to communicate with classmates about college acceptance/rejection, dealing with competition and comparison
- Sexual education, relationships, societal norms, and life scenarios
- Mental health and well-being

- Substances, use, and decision-making
- Technology — digital citizenship, privacy, digital footprint, and use
- Mindfulness and tools for personal balance
- Life beyond Nueva — how college/life expectations match/differ from Nueva's culture of learning

Homework & Assignments
Homework might include reading short articles, written reflections, watching a short video, or listening to a podcast on topics to be discussed in class. Students will also be asked to practice the social and emotional skills that they learn in class.

Assessment
Students will be assessed based on their engagement and completion of course activities. Through narratives, each student will receive individualized feedback aimed at enhancing their social and emotional development.

Grade 9 Quest

Overview
Quest is an opportunity for students to prototype areas of potential interests and to discover how they learn best in an ambiguous, open-ended environment. It is also a recognition that our students have interests farther and wider than the course offerings at Nueva, a challenge to courageously explore these broad interests, and an invitation to weave these experiences into their high school journey.

Ninth graders will meet with the Quest coaching team approximately twice a month during Quest classes. While students should expect that most of the work for Quest will happen outside of school, Quest coaches will provide guidance to support students during their Quests, including selecting potential directions, narrowing the focus to specific ideas or projects, planning out a Quest timeline, communicating with mentors, etc. Students will leverage design thinking and project management strategies to help themselves and each other make progress on their Quests. In May, all students in the Upper School will present snapshots of their learning during the Quest Expo. The school year concludes with students reflecting on this year's Quest and beginning to brainstorm ideas for next year's.

Goals
As part of their Quest journeys, students will:

- locate and utilize a wide range of resources to learn about their areas of interest
- learn to flare then focus and listen to their inner voices in order to select ideas that ignite and inspire them
- apply design thinking strategies during idea development and execution
- practice project planning, time management, and progress tracking
- reflect on and document their individual Quest journeys
- connect with professionals outside of their immediate network as mentors and collaborate with them
- present a snapshot of their learning during the annual Quest Expo.

Homework
Students will do most of the work for Quest outside of school and are expected to make steady progress towards their defined goals. They will also be assigned, through Canvas, to submit documentation and respond to prompts about their progress. They will be responsible for seeking out mentors and committing to work with them throughout the year. In addition, students will prepare a snapshot of their learning, including a display and presentation, for Quest Expo in May.

Assessment
Assessment will occur through a combination of reflection and documentation (submitted through Canvas), active participation in class discussions and activities, support for fellow students by giving constructive feedback, and, ultimately, presentation at Quest Expo.

Grade 9 Design Engineering

Overview
This course introduces students to design thinking and the Innovation Lab (I-Lab) tools through an immersive, human-centered design process. Each year we focus on designing a solution to a different problem in the community. This year we will focus on the needs of various teachers and lab spaces on campus. A few teachers have graciously volunteered to be representative users for our design teams, including some of the chemistry faculty. Students will work on a team to research, interview, brainstorm, and prototype solutions to a specific problem that they identify through talking to real users. This class gives students the confidence and a toolbox of skills to develop an idea into physical reality using a human-centered process that starts with the needs before developing solutions. Particular emphasis will be placed on developing the need-finding and prototyping skills of each student so they can design and test product concepts.

Goals
Students will be able to:

- practice design thinking and become comfortable with the process
- demonstrate empathy with others
- brainstorm with confidence
- understand I-Lab resources and use some of the tools
- interviewing others comfortably
- observe and identify problems (and opportunities)
- prototype with purpose in different materials
- communicate and present solutions addressing a need
- work well in teams towards a design goal

Homework
Students will be assigned to do some brainstorming, idea generation, and reflections. Each student will maintain a design notebook that will include all of this information to document their design process. Most prototyping will be done in class, but students may occasionally bring work home to complete or to build more complex features.

Assessment
Assessment will be completed through design reviews and presentations of work, teacher observation in class, and self-reflection.

Grade 9 Computer Science

Overview
Computer science is used in virtually every field, and we'll look at many different examples of problem solving in this field. Some of these uses raise ethical issues around privacy and security, providing rich discussion material on the trade-offs involved. Using exploratory and open-ended projects in Python, students will become more comfortable with writing computer programs and understanding the code of other programmers. As part of the

Design Thinking strand, we will examine how prototyping can be used to refine ideas and test our assumptions early in our design process.

Goals

All students will:

- understand how computer science is used in different fields
- learn how prototyping is done in the field of computer science
- practice debugging and develop resilience
- become more comfortable with computational thinking and structures

Homework

Students may need to do some research and brainstorming at home. Programming work will be done in class, but students may occasionally need to finish tasks at home.

Assessment

Assessment will be done through code submissions, teacher observation during in-class work, and self-reflection.

Grade 10 Interdisciplinary Studies of Science

Overview

The first semester will begin with a discussion of more abstract questions:

- What is knowledge?
- How does science progress?
- Has science been the same over time?
- How much does our language influence our thought?
- Can we, as subjective beings, be objective?
- Most importantly, why is asking these questions important for science?

Readings will include Plato, modern philosophers and historians of science, cognitive linguists, and science critiques by scientists. Themes of the first semester will include: objectivity and truth, language and metaphors in the sciences, different models of scientific progress and history, scientific images, science literacy, and data and statistics.

These philosophical foundations will set the stage for the second semester, where we shall delve more deeply into the history of science and the intersection of science and society, addressing such topics as the apparent science/religion dichotomy, the ethics of ownership, the social effects of scientific discovery, and social contexts for scientific history.

While core topics and readings will structure the course, it also aims to nimbly address questions that emerge through discussion. Readings will be assigned at the end of each class according to the discussion of the day. There will also be interdisciplinary projects drawn from the work of other classes to ask questions about larger themes through intersection.

Goals

The Interdisciplinary Studies of Science course in the tenth grade intends to:

- develop scientific literacy through awareness of scientific history and social, ethical, and methodological issues in the sciences
- help students connect their curriculum by building the instinct for interdisciplinary thinking
- explore issues in the history and sociology of science

- hone students' comfort with analyzing complex primary and secondary texts from a variety of disciplines, including the sciences, history of science, philosophy, cognitive linguistics, sociology, and classics
- grow student ability to constructively discourse about such texts

Homework & Assignments

This course will primarily be a discussion seminar. To this end, students' responsibilities for this course include:

- having thoroughly read the required reading(s) for each session
- posting a discussion question, revelation, or reading response to the class forum before class, as well as responding to someone else's comment
- utilizing a "Discussion Data-Tracker" to keep track of their contributions during class discussions (this information will be utilized for self-reflection as well as being the foundation for a larger discourse on data, the individual case, and statistics)
- completing a written or 90-second video reflection at the end of each class

This class will also contain a larger project each semester: in the first semester, a historical fiction project set around a story in the history of science; in the second semester, a presentational satire of misuses of the scientific method and an analysis of the data we gathered in tracking discussion throughout the first semester. There will also be larger interdisciplinary projects constructed collaboratively with the science, mathematics, and history classes.

Assessment

As a discussion seminar, this class's success relies on the preparedness of the students as well as their continual reflection and timely completion of assignments. Students will be assessed on the responsibilities listed above and asked to be self-reflective about their participation in class.

Calendar

Because this course meets only once a week, students should be aware of the necessity of completing reading and prep for class ahead of time and allotting time to engage with complex readings and, rarely, longer projects.

Electives

Nueva Soundwaves

Overview

Our Soundwaves elective is an auditioned choral ensemble for experienced singers who want to take their music-making to the next level. Any interested student should contact Cathy to arrange for an audition.

This ensemble will explore advanced choral and vocal technique and music theory through an accompanied and *a cappella* mix of choral repertoire, including classical, pop, jazz, and/or musical theater repertoire. Students will perform in groups and as solo artists.

While rehearsing a variety of music, students will refine their individual and ensemble singing skills and develop a repertoire of songs from multiple genres to perform in school and the community.

Homework

Most of our work in this elective will occur during class time. Students will be assigned various theory, sight-reading, and other listening reflections throughout the semester. Additionally, students will be responsible for learning their individual parts outside of our weekly rehearsals.

Assessment

Students will be primarily assessed through positive participation during class time, their willingness to practice between classes, and their growth throughout the course. Additionally, students will be assigned one or two solo or small-group numbers to analyze and perform. Projects will be assessed with a rubric, self-evaluations, and narrative.

Nueva Steel Drum Band

Overview

In the fall semester, the steel band will focus on learning compositions by Trinidadian steel drum virtuoso Robert Greenidge. Robert is one of the world's most influential steel drum composers, and while he has been known worldwide as a part of Jimmy Buffet's Coral Reefer band for the past 30 years, he is also a panorama winner in Trinidad's Carnival, arranging for the 120-member Desperadoes Steel Orchestra. Robert's compositions are beautiful yet technically demanding with intricate strumming rhythms, which will require much attention in rehearsal.

The band will learn a number of pieces to culminate in a "Caribbean Night at Nueva," a concert performance with Robert Greenidge in the GCC on December 1 at 7:00 pm. Joining Robert and the Nueva steel bands will be former Santana lead vocalist, 11-time Grammy winner Tony Lindsay.

In addition to learning the calypso stylings of Robert's music, we will most likely do several Santana tunes as well as music by Sting and Bill Withers. The rhythms of each style present different challenges for each section of the band.

Goals

The goal of the class is to develop an advanced steel drum ensemble for the high school that will play complex arrangements in a variety of musical styles. The ensemble will perform at school and in the community throughout the year. We will also perform at the upper school arts culmination in early December.

This class is open to students who have had previous experience playing steel drums, either at Nueva or elsewhere.

Homework
In addition to the performance aspect, we will research the history of the instrument, its cultural significance, its pioneers, and its greatest composers and performers. Students will do individual research projects on the development of the modern steel band and its musical styles, as well as listening to a variety of music related to the instrument.

Assessment
Students will be assessed primarily on their positive participation in rehearsals, willingness to practice parts individually between classes, attendance, and participation in the concert. In addition, students will be evaluated on their willingness to listen to the different genres of music played and to strengthen their music theory skills.

Groove Workshop

Overview
Groove Workshop is a music performance workshop designed to teach students how to form and maintain a band — in other words, how to rock! Areas covered will include analysis of song form and structure, rehearsal methods, chart writing, equipment setup, and performance tips and tricks. A big part of being in a successful band is having the ability to communicate and be open to the ideas of others. Making music is a great way to create bonds and build teamwork. This class gives students that opportunity.

Goals
The goals of the elective will be to master the songs we choose to learn, develop proficiency as musicians through playing challenging music, learn to play well as a band, and perform both at Nueva and in the community.

Homework
Most of our work in this elective occurs during class time. When we begin a more challenging piece of music, I will ask students to spend some time learning the music at home so we can use the class time learning the song as a whole, rather than teaching students individual parts.

Assessment
Primarily, students are assessed through their positive participation during class time and their willingness to practice and work on music. As this is considered an advanced group, students are expected to be proficient at all their individual parts for each song we learn.

Jazz Ensemble

Overview
Jazz Ensemble will study and perform various jazz stylings, including blues, swing, Latin, Brazilian, and calypso. Each style will be explored historically, theoretically, and in performance. Emphasis will be on the basic concepts of each style as well as improvisation. Students will be exposed to “standards,” the classic compositions that are an integral part of any jazz musician’s vocabulary.

In addition to performing at the upper school arts culmination on Thursday evening, December 13, we will look for other opportunities to perform at open houses and informal lunch concerts and morning meetings. Grading will be based on attendance and participation in class.

Goals

The Jazz Ensemble is designed to increase a student's musical proficiency, rhythmic vocabulary, ability to improvise, knowledge of theory, and understanding of that uniquely American art form — jazz. We will use a variety of rehearsal methods intended to strengthen and expand both conceptual and practical knowledge, and to help students improve their ability to hear intervals, melody, chords, and rhythms. For example, we will learn jazz standards, modern jazz compositions, and musical forms directly related to jazz, like the Brazilian samba and Latin jazz.

Homework

Most of our work in this elective occurs during class time. When we begin a more challenging piece of music, I will ask students to spend some time learning the music at home so we can use the class time learning the song as a whole, rather than teaching students individual parts.

Assessment

Primarily, students are assessed through their positive participation during class time and their willingness to practice and work on music and improvisation between classes. Additionally, students will be assessed on their willingness to learn the language of improvisation, which includes the study of chord/scale relationships, and how improvising musicians apply those concepts in an ensemble and performance setting.

Drawing 1

Overview

Drawing considers our perception, observation, and knowing of the world around us. It is a method of recording and expression in a visual language all its own. This studio course focuses on technical skill as well as mark-making as a form of creative exploration. Students will examine their interests and ideas through visual representation, working both technically and intuitively. Though class time will include lessons and discussions, students will typically be working on projects using a variety of drawing media, including (but not limited to) graphite, charcoal, and colored pencil. Studio time encourages a quiet focus and provides the necessary hours to build and refine the connection between the hand and eye. We will explore historically significant and contemporary artists, along with concepts in visual and critical studies. Students are strongly encouraged to participate in a culminating art show at the end of the semester.

Goals

- Art provides a powerful and essential means of communication through unique symbol systems and metaphors that convey and inform life experiences
- Generating/problem-solving: Can demonstrate creativity and originality with many ideas, experimentation, connecting to previous knowledge, creative problem-solving
- New ways of seeing: Art provides a framework for viewing the world
- Visual creation as creative self-realization
- Understanding the elements and principles of design provides the tools for visual expression
- The arts as culture, history, and connectors

Homework

This course will have at least one short reading and sketchbook assignments, and will require studio time outside of class to finish projects.

Assessment

Assessment is based on the student's enthusiasm, willingness, and initiative in engaging with the subject. There is also a strong emphasis on innovation, respect for materials, and utilization of skills covered. Students are expected to complete all assignments, which will include but not be limited to:

- blind contour drawing
- monochromatic still-life
- charcoal still-life
- group drawing project
- literal and nonliteral self-portrait

Mixed Media 1

Overview

Mixed Media 1 is a studio course that explores a range of 2-D processes including (but not limited to) drawing, painting, collage, and digital media. Throughout the semester, students will utilize different surfaces and materials in both traditional and alternative methods. Working with representation and abstraction, students will be encouraged to experiment within the framework and assignments of the class. Course content will address our daily visual experiences, whether through the screens on our devices or actual objects. More specifically, we will examine texture and dimension as illusion on a flat surface through the act of art making. We will consider these modes of seeing through juxtaposing and combining digital and other 2-D media. This class seeks to develop the student's sense of visual literacy and personal art practice. Mixed Media 1 is designed to build technical skill and foster independent and creative thought that is both strategic and spontaneous. Students are strongly encouraged to participate in a culminating art show at the end of the semester.

Goals

- Art provides a powerful and essential means of communication through unique symbol systems and metaphors that convey and inform life experiences
- Generating/problem-solving: Can demonstrate creativity and originality with many ideas, experimentation, connecting to previous knowledge, creative problem solving
- New ways of seeing: Art provides a framework for viewing the world
- Visual creation as creative self-realization
- Understanding the elements and principles of design provides the tools for visual expression
- The arts as culture, history, and connectors

Homework

This course will have at least one short reading, several small assignments, and will require studio time outside of class to finish projects.

Assessment

Assessment is based on the student's enthusiasm, willingness, and initiative in engaging with the subject. There is also an emphasis on innovation, respect for materials, and utilization of skills covered. Students are expected to complete all assignments, which will include but not be limited to:

- architectural/environmental collage
- image transfer/surfaces project
- site-specific installation

Art and Fabrication 1

Overview

This semester-long course combines the fields of visual art and fabrication. Students in this course work in a variety of media to create projects that demonstrate understanding and consideration of craftsmanship and the elements and principles of visual art. These elements and principles include, but are not limited to, space, form, balance, light, and contrast. Students gain firsthand knowledge and experience with construction by using a variety of hand tools, power tools, and materials, such as the hand drill, chop saw, band saw, belt and orbital sanders, wire, foam, wood, and sheet metal. Emphasis is placed on appropriate use of tools and safety. Students create work that can range from representational to abstract; it might be inspired by historical or contemporary artists and art movements. Through readings, slide presentations, and visiting artists, students consider the context in which they are creating art. Throughout their process, creative problem-solving and intentional decision-making will play a significant role in their ability to consider their ideas through visual means. Students participate in critiques as a means to develop critical thinking skills and to further understand the meaning in their work.

Goals

Some students who take this course have more experience with artistic expression than with mechanical fabrication. This course aims to empower these students by giving them the fundamental shop skills they need to create physical objects beyond those that are possible using pens, pencils, paints, and traditional sculptural media. By gaining competence and confidence in the use of hand and power tools, these artists will be transformed into maker-artists, capable of constructing robust, 3-D art from their already formidable imaginations.

Some students enrolled in Art and Fabrication 1, on the other hand, are more talented in the areas of engineering and power tool usage than in generating, developing, and realizing artistic visions. This course aims to empower these students by introducing them to artistic and creative processes and by giving them ample opportunity to practice visual creation. Just as understanding proper, safe usage of shop spaces provides the tools for physical creation, so will understanding the elements and principles of design provide the tools for visual expression.

All students, regardless of former capabilities, will grow their knowledge of and skills in both art *and* fabrication by the application of each in the context of the other.

Homework & Assignments

This course will have at least one short reading, several small assignments, and will require studio time outside of class to finish projects.

Assessment

Assessment is based on the student's enthusiasm, willingness, and initiative in engaging with the subject. There is also a strong emphasis on innovation, respect for tools and materials (including cleanup), and utilization of skills covered, both in art and fabrication. Students are expected to complete at least three assignments, including but not limited to:

- biomorphic chair project
- cube sculpture
- final project

Further assessment will be based on students' self-reflection.

Introduction to Sculpture: Ceramics and Clay

Overview

This is a studio class that explores ways of thinking three-dimensionally, with clay as the primary medium. It serves the needs of beginners and experienced students of art. In addition to sculpture techniques, the elements of the three-dimensional art and design will be studied as they apply to the projects at hand. Students work in both subtractive and additive manners, incorporating basic aesthetic concepts such as line, texture, composition, balance, mass, space, rhythm, tension, movement, light, and density. Students explore the relationship between form and content in materials through hand-building techniques in clay. Projects investigate representation (people and things), abstraction, and architecturally inspired design/installation. Students are encouraged to think about the conceptual possibilities of sculpture and expressing a personal point of view.

Students participate in a culminating upper school gallery showing, presentations, and critiques. Homework includes some reading, writing, and sketchbook assignments.

Goals for the Discipline (Enduring Understanding)

- Art as communication: In today's society, the arts are the media and provide powerful, essential means of communication — unique symbol systems and metaphors that convey and inform life experiences
- Art as perception: Processing, analyzing, and responding to sensory information through the language and skills unique to the visual arts
- Generating and solving problems: Demonstrating creativity and originality through many ideas, experimentation, making connections to previous knowledge, creative problem-solving
- Aesthetic valuing: Students analyze, assess, and derive meaning from works of art, including their own, according to the elements of art, the principles of design, and aesthetic qualities
- New ways of seeing: Art provides a framework for viewing the world
- Visual creation as creative self-realization
- Understanding how the elements and principles of design provide the tools for visual expression
- The arts as culture, history, and connector

Learning Outcomes (Skills)

- Understand and demonstrate the idea of "transformation" of materials to create/and or change meaning
- Demonstrate three-dimensional thinking and production through clay sculpture processes (practice)
- Work in additive and subtractive methods (practice)
- Explore, practice, and experiment with clay bodies, tools, and glazes
- Learn about different clay bodies, stages of dryness, storage and reclaiming, clay preparation, safety procedures in the studio
- Demonstrate understanding and incorporate elements and principles of art
- Develop the skills needed in the sculptural process, such as form, structure, volume, visual balance, surface treatment, composition, movement, and scale
- Develop conceptual intent, aesthetics, and technical skills in order to achieve and expand the sculptural objective
- Explore the relationship between form and content, express a personal point of view, and consider the conceptual possibilities of sculpture
- Engage others through the presentation and dialogue of their work

Projects

- 3 pinch pots that are unified as a group or collection
- Double pinch pot animals (students who have previous clay experience will design an animal with an element of surprise)

- Coiled sculpture (abstract/organic, figurative, architectural)
- Slab hands & introduction to surface decoration techniques (paper resist, decals, handmade stamps and found nature objects)
- Slab wall relief sculpture (texture inspired from nature)
- Collaborative ceramic totems
- Intro to bisque mold

Painting 1

Overview

Painting is a studio class that teaches students about working with paint and exploring a range of applications. The course covers color, light, space, and the handling of paint (gouache and acrylic) in addition to exploring the beauty of forms and color. Students will be painting people, places, and things while simultaneously exploring ideas about abstraction, representation, and expression. Students are encouraged to reflect on their own lives, experiences, interests, and hobbies as inspiration for their work while building their painting skills. Aside from studio work, there will be critiques, sketchbook homework, some reading, and writing. The ultimate goal is for each student to develop an individual visual vocabulary and to transform an assignment into a quest that demonstrates curiosity, commitment, and craft.

Goals

Painting 1 is an introductory course covering the basic principles and techniques of the painting process. This course is designed as a one-semester studio practice and will be primarily based in the use of acrylic paint and gouache. Beginning painting fundamentals to be explored include: value, color theory, mixing paints, and mediums. Each assignment will introduce students to the elements and principles of design to help build their artistic vocabulary and understanding. The instructor will help each student engage strategies for conceptual development by working through individual painting problems and emphasizing personal meaning and relevance to contemporary culture.

Goals for the Discipline (Enduring Understanding)

- Art as communication: In today's society, the arts are the media and provide powerful, essential means of communication — unique symbol systems and metaphors that convey and inform life experiences
- Art as perception: Processing, analyzing, and responding to sensory information through the language and skills unique to the visual arts
- Generating and solving problems: Demonstrating creativity and originality through many ideas, experimentation, making connections to previous knowledge, creative problem-solving
- Aesthetic valuing: Students analyze, assess, and derive meaning from works of art, including their own, according to the elements of art, the principles of design, and aesthetic qualities
- New ways of seeing: Art provides a framework for viewing the world
- Visual creation as creative self-realization
- Understanding how the elements and principles of design provide the tools for visual expression
- The arts as culture, history, and connector

Projects

- Monochromatic painting
- Painting from life (light & shadow study)
- Limited palette portrait

Homework

Homework includes occasional readings, sketchbook assignments, and research for projects.

Assessment

Assessment is based on a willingness to engage with the subject. There is a strong emphasis on craftsmanship, innovation, effort, perseverance, respect for materials, and utilization of skills covered. Students are expected to complete all projects and participate in critiques. In addition, all students are required to participate in the Arts Culmination at the end of the semester.

Introduction to Photography

Overview

In this studio class, we will explore the fundamentals of photography with a focus on the act of making images. In most of our classes we will be talking together as a class rather than having the instructor talk at the students. Students will complete six collections of photos or photo essays.

We will examine the decisions involved in taking a picture (see technical skills below). Students will learn the technical skills (camera, RAW/Lightroom/Photoshop, digital printing) needed to produce "good" photographs.

Short readings, slideshows, artist documentaries, and class discussions will add theoretical grounding to a series of independent shooting assignments. We will critique assignments as a group and develop a practice of constructive peer review.

Shooting assignments will require time outside of class.

Photographers often work on assignment. A user has a need for a set of images that communicates a message (“Buy me!” “Visit us!” “I am beautiful!”). The photographer must work closely with the user to determine how to communicate that message. Photographers use elements of design thinking to inform the creation of their images. Later in the semester, the class will collaborate with the Nueva yearbook team. They will be our user and we will help them complete the yearbook. This also provides an opportunity for students to publish work.

Goals

This course is about image-making and technology; neither is primary. In order to make a good image, one must learn the tools of the trade. Image-making tools include dynamic composition and use of light with purpose and intent. The students will learn to use these technical skills within the context of design thinking. The goals beyond making images are for the students to seek out understanding beyond the classroom and teach themselves the skills they will need to make the images that communicate their individual vision.

Materials

If students have access to their own SLR camera, they may use it. Cameras will be provided by the IT department for those students who need them.

Topics

Technical Skills

- Depth of field
- Shutter speed
- Composition
- Using light
- Decision making: when to push the button
- Retouching
- Editing/choosing the best photo

Movements/Concepts

- Early photography
- Documentary and street photography

- Straight photography and Group f/64
- Staged photography
- Design thinking and photography

Homework
Students are encouraged to photograph outside of school, especially for the documentary project.

Assessment
Students will complete six photo collections or essays and the class as a whole will provide feedback both positive and constructive. The students will have multiple opportunities to demonstrate their mastery of the skills standards listed in the course template. Students will be assessed on the control they have over the various skills and their ability to use the skills to communicate their intent photographically. Assignments will be turned in on a class blog.

Fall Production

Overview
This year's play is *Middletown*, Will Eno's 2010 homage to Thornton Wilder's classic *Our Town*. This hilarious and powerful show leverages the simplicity of everyday interactions to home in on the pathos of human nature. As we build our ensemble and craft our production, students are encouraged to contribute in ways beyond just acting — there will be opportunities available during the rehearsal and production process for people of diverse talents and interests. We will begin our exploration of the play with academic and dramaturgical work, transitioning to the creative processes of interpretation, blocking, and performance as we ready the play to be presented to the wider community. Our group will continue to meet during class time in the weeks following performances, allowing students to debrief the production and to delve deeper into the text, the style or world of the play, and alternate representations of the play. We will start our debrief by meeting as a mini "book club" to explore *Our Town*, then we will confront some contemporary drama that is in dialogue with *Middletown*, learn from theatrical professionals around the Bay Area, and finish the semester strong with personal presentations to be devised, written, and designed by the students.

Goals
In this semester-long course, our primary goal and process will be the creation, from a script, of a full-length production, including table work, blocking, and rehearsing off-book. This work will culminate in three public performances (November 1–3). Through a detailed exploration of this play in particular and theatrical craft in general, students will hone their skills across numerous theatrical realms, collaborating under the guidance of the teachers/directors to create an experience that is so much more than just a presentation of the script. As our ensemble works together, students will grow as artists, creators, improvisers, analysts, thinkers, teammates, and empathizers.

Homework & Assessment
Homework in the first half of the semester will consist primarily of memorizing lines and blocking, as well as helping to create designs that we will use in the various aspects of our show. In the second half of the semester, the homework will be light (to reflect the front-weighting of our semester building up to opening night) and largely project-based.

Students will be assessed using a single-point rubric that draws together skills across the theatrical spectrum. Given the creative nature of this class, there will be no bound assessments in the form of tests or quizzes; rather, students will be constantly growing and receiving feedback from the teachers and each other. Students are encouraged to view our performances not as a moment of assessment but instead as an important step in the process of artistic development.

Rehearsals & Materials

Rehearsals will be held during class time, with occasional after-school sessions and one or two Saturdays in advance of the show, culminating in an immersive Tech Week starting at the end of October. Performances will be November 1–3, and attendance for all performances and technical rehearsals is mandatory. Students are expected to arrive at all rehearsals (and classes) prepared with their script and anything else that they need to present for that day, as well as proper writing utensils with which to take notes. We will mostly not be using laptops or cell phones in class, although students might find such technology helpful for the design work that they do outside of class.

Journalism

Overview

In this yearlong course, students will read and write a range of newspaper writing styles, including news, feature, opinion-editorial, sports, and entertainment. We will learn to write for different audiences and purposes, practice revision, and create compelling and meaningful stories that meet standards of accuracy, grammar, style, and journalism ethics. This is a writing and newspaper production course that explores a variety of storytelling techniques, emphasizes the importance of research and interviewing, and teaches layout and editorial design.

Students will work independently and in small groups on all stages of newspaper production to publish the student newspaper. Like all journalists, students will work in a fast-paced environment where meeting deadlines is a priority and keen attention to detail is required. This class will emphasize both collaboration and student leadership; editorial responsibilities are given to students who demonstrate exemplary expertise, commitment, and leadership. Students are expected to spend additional time outside of class in the production of the newspaper.

Through participation in this course students will become members of both the Columbia Scholastic Press Association and the National Scholastic Press Association. These national organizations for student journalists hold yearly conventions and publications competitions. Students will be encouraged to submit their work for critique and judging to each organization's yearly contests, and a delegation of Nueva students will attend the NSPA spring journalism convention in San Francisco.

Goals

We will work collaboratively across a range of journalistic media in order to cover events and topics that are interesting, thought-provoking, and impactful.

Materials

Students will produce the yearbook in Adobe Creative Suite on school-provided laptops. The instructor will provide additional materials and supplemental readings. Foundational texts include *Telling True Stories* edited by Mark Kramer and Wendy Call and *Writing & Reporting for the Media (11th edition)*.

Homework

All students will write stories and then plan and design the page layout for framing their work. Writing and reading assignments will be assigned as homework, and most design and revision work will be completed during class hours.

Assessment

Students will receive ongoing verbal and written feedback on their developing skills. For writing assignments, students will be given a rubric along with comments from the instructor. Students will also be assessed based on their engagement in class activities, their effort to work collaboratively and productively, the timely delivery of

scheduled content by set deadlines, and their commitment to producing the best work of which they are capable.

Yearbook

Overview

This yearlong course produces Nueva's annual yearbook. Yearbook offers students an exciting opportunity to further their creative interests in writing, design, and photography while acquiring highly transferable skills in journalism, print production, and visual storytelling. Skills covered include digital design (specifically layout, theme development, and the use of Adobe InDesign), journalistic writing (features, captions, and interviews), and digital photography (composition, shutter rate, depth of field, and Adobe Photoshop). This class will emphasize both collaboration and student leadership, and students are expected to invest fully in the course by meeting all deadlines and actively participating in class and all work sessions. Students are expected to complete assignments on deadline, to fulfill their duties as staff or editors, and to contribute to the overall advancement of the yearbook theme and content.

Through participation in this course students will become members of both the Columbia Scholastic Press Association and the National Scholastic Press Association. These national organizations for student journalists hold yearly conventions and publications competitions. Students will be encouraged to submit their work for critique and judging to each organization's yearly contests, and a delegation of Nueva students will attend the NSPA spring journalism convention in Los Angeles. This class will also include a visit to a Bay Area publishing house where students can meet and learn from publishing professionals at work in the real world.

Goals

We will work collaboratively across a range of journalistic media in order to convey the narrative of the 2018–2019 school year in an inventive, compelling book emblematic of the Nueva experience.

Materials

Students will produce the yearbook in Adobe Creative Suite on school-provided laptops. The instructor will provide additional materials and supplemental readings. Students are requested to procure a digital SLR camera that they should keep in their locker.

Homework

At the beginning of the year students will work on presentations as they investigate the role of design, photography, and written content in outstanding publications. As the year progresses all students will write copy, design spreads, and take photos for the yearbook. Students will shoot afterschool events, but most work on the yearbook will be completed during class hours.

Assessment

Students will be assessed based on their engagement in class activities, their effort to work collaboratively and productively, the timely delivery of scheduled content by yearbook deadlines, and their commitment to producing the best work of which they are capable.

Japanamerica: Japanese Pop Culture

Overview

From Godzilla to Pokemon, Japanese pop culture has become an integral part of American pop culture. Indeed, some of the most beloved and iconic American films and TV shows of the past few decades, from *Star Wars* and "Speed Racer" to *The Lion King* and "Iron Chef America," have been inspired by or copied from original Japanese

source material. Now, American directors are even remaking classic Japanese films such as *Godzilla* and *Ghost in the Shell*. One critic has called this process of cultural cross-pollination "Japanamerica." This course examines the changing landscape of "Japanamerica" from the 1950s to the present, exploring the historical, political, economic, and cultural reasons why Japanese pop culture has become so popular in the United States and the rest of the world. Primary texts will include manga, anime, films, and music, with secondary readings taken from literary and cultural studies, film studies, history, musicology, and more. Some of the topics to be explored include: Godzilla and the atomic bombings, superheroes and special effects (tokusatsu), shonen (teenage boy) and shojo (teenage girl) manga, Hello Kitty and the culture of "cute," robots and cyborgs, otaku (obsessive fan) subcultures, J-Pop and hip hop in Japan, and the emergence of "Cool Japan." In addition to regular readings and screenings, students will be expected to participate actively in classroom discussions, submit reading responses, write analytical and rhetorical essays, and do a final presentation. The course materials (listed below) include graphic imagery, such as depictions of violence and bodily transformations, and discussions of gender and sexuality, but nothing sexually explicit or otherwise inappropriate. All readings are in English and all audiovisual materials have English subtitles or are dubbed into English. The course is open to all students regardless of Japanese language ability or knowledge of Japanese culture.

Goals

This course has five main objectives:

- to give students a broad and deep understanding of Japanese pop culture, including its historical roots, main themes, important texts, and ideological assumptions.
- to encourage students to think more critically and historically about American pop culture, especially how it has shaped, consumed, and (mis)represented Japanese pop culture.
- to introduce students to a wide range of theoretical approaches to popular culture, such as Marxism, postmodernism, postcolonialism, film studies, gender studies, and critical race theory.
- to improve students' writing, reading, speaking, and critical thinking skills through a variety of assignments, discussions, and projects.
- to promote global citizenship by building students' media literacy, intercultural competence, global awareness, and leadership skills.

Materials

Books (selected chapters):

- Allison, Anne. Millennial Monsters: Japanese Toys and the Global Imagination. U of California Press, 2006.
- Bolton, Christopher. *Interpreting Anime*. U of Minnesota Press, 2018.
- Craig, Timothy. Cool Japan: Case Studies from Japan's Cultural and Creative Industries. BlueSky Publishing, 2017.
- Freedman, Alisa and Toby Slade, eds. *Introducing Japanese Popular Culture*. Routledge, 2017.
- Kelts, Roland. Japanamerica: How Japanese Culture Has Invaded the U.S. St. Martin's Griffin, 2007.
- Napier, Susan J. Anime from Akira to Howl's Moving Castle: Experiencing Contemporary Japanese Animation. St. Martin's Griffin, 2005.
- Tsutsui, William M. *Japanese Popular Culture and Globalization*. Association for Asian Studies, 2010.
- Yano, Christine R. Pink Globalization: *Hello Kitty's Trek Across the Pacific*. Duke U Press, 2013.
- Yoshimoto, Banana. *Kitchen*. Trans. Megan Backus. Grove Press, 2006.

Films and TV shows:

- *Akira* (dir. Katsuhiro Otomo, 1988)
- *Astro Boy* (dir. Osamu Tezuka, 1963) (selected episodes)
- *Ghost in the Shell* (dir. Mamoru Oshii, 1995) and Ghost in the Shell (dir. Rupert Sanders, 2017)
- *Godzilla* (dir. Ishiro Honda, 1954) and Godzilla, King of the Monsters! (dir. Terry Morse and Ishiro Honda, 1956)
- *Kikaider* (dir. Shotaro Ishinomori, 1972) (selected episodes)

- *Mighty Morphin Power Rangers* (dir. Haim Saban and Shuki Levy, 1993) (selected episodes)
- *Spirited Away* (dir. Hayao Miyazaki, 2001)
- The Girl Who Leapt Through Time (dir. Mamoru Hosoda, 2006)
- *Train Man* (dir. Shosuke Murakami, 2005)
- *Ultraman* (dir. Eiji Tsuburaya, 1966) (selected episodes)

Note: The instructor will provide additional readings and materials.

Homework

Homework is essential for reviewing and reinforcing concepts learned in class. For this reason, students will be assigned homework on a regular basis through the online learning management system Canvas. Students are expected to spend approximately 90 minutes total on homework or self-study per week. Homework may include, but is not limited to, readings, online viewings, reading responses, and questions prepared by the instructor. From time to time, students may be asked to do other tasks at home, such as read or watch online materials and prepare for individual or group projects. Late or incomplete homework assignments will have a negative impact on a student's final grade. If a student is having trouble with homework or needs more time to finish it, he or she must contact the instructor before class time, preferably 24 hours in advance. Otherwise the homework will be counted as late or incomplete.

Assessment

Students will be assessed regularly using a standards-based grading template that is available on Canvas. This template covers three main categories: content and knowledge, skills and practices, and habits of learning. For certain assignments, such as essays and presentations, students will be given more specific guidelines and rubrics. Formal assessments may include, but are not limited to:

- readings and reading responses
- creative projects (posters, products, and creative writing)
- essays (analytical and rhetorical)
- presentations

Students will receive regular oral and written feedback on their progress and performance. There will also be chances for self-assessment and self-reflection during the year.

Speech and Debate

Overview

The course introduces four competitive speech and debate events: Extemporaneous Speaking, Impromptu Speaking, Parliamentary Debate, and Public Forum Debate. Students then choose one speech and one debate event in which they specialize. Public forum debaters will research and write cases on bimonthly and monthly topics issued by the National Speech and Debate Association; parliamentary debaters and extemporaneous speakers will read widely on current events. All students will compete in at least one interscholastic tournament each semester (though many more are offered).

Goals

- Increase comfort level with prepared and impromptu public speaking
- Expand research skills
- Foster ability to see all sides and main aspects of public policy issues
- Build teamwork in research and performance

Materials

The wide world of online and library research; also *Beyond Resolved: A Public Forum Debate Manual*, by Ashley Artmann.

Homework
Public forum homework consists mostly of research and case writing on the current topics (generated monthly or bimonthly by the National Speech and Debate Association). Parliamentary debaters will write (and rewrite) briefs on a wide variety of current affairs topics. Advanced debaters act as mentors.

Assessment
Class participation; case writing and research evaluation; ambient and focused assessments of oral performance in practice and competition (NOT related to wins and losses!). Key skills: the ability to analyze a debate topic; the ability to find useful resources that support arguments on those topics; the ability to create well-organized, evidence-based presentations; adaptation to and communication with the judge.

Environmental Economics

Overview
Climate change has forced governments across the world to consider new and creative ways of regulating the environment. Our course will consider the economic underpinnings of emissions trading, carbon taxes, command and control programs, fishery management, and many other environmental policies. In order to experience the effects of emission policies first-hand, students will compete against each other in an "Electricity Strategy Game" that will simulate the effects of emissions policies on electric utilities. We will investigate the political economy of environmental policy, looking into why strong environmental policy is rare and discovering ways to make regulations more financially palatable. Our class will also gain insight into the challenges of forming binding international climate agreements by applying game theory bargaining models to contemporary climate change agreements such as the Kyoto Protocol and the Paris climate change agreement. We will dive deeply into the many models of emissions-trading programs by considering carbon offset programs, price floors, grandfathering, and the effects of California's sulfur dioxide cap-and-trade program. The course will be structured around the tools and models of microeconomics, utilizing graphical analyses, critical thinking skills, and a survey of contemporary research.

Goals
This course will provide budding economists an opportunity to apply their microeconomic knowledge to challenging environmental issues. Students will learn to:

- quantify the global value of environmental resources for current and future generations through discounting and risk analysis
- discern optimal levels of natural resource protection and pollution abatement based on projections of marginal cost, surplus, and efficiency
- evaluate the effects of differing environmental policies by considering firm behavior, industrial organization, and price elasticity
- analyze international climate agreements, using game-theoretical concepts
- identify environmental and economic issues for future research

Homework & Assessment
All students are expected to complete assigned readings and relevant questions in preparation for class discussions. Problem sets will be assigned for each unit. These will be completed individually and reviewed in groups in class. Students will be assessed on their ability to demonstrate graphically, analytically, and verbally that they understand applications of the core concepts of the course. During the last month of the semester students will participate in the Electricity Strategy Game in which they will develop complex strategies based upon the modeling approaches they have learned throughout the semester. They will be evaluated on their success, capacity to work well within a team, and accurate usage of economic data to forecast the effects of their decisions.

Materials

Our course will survey important academic papers within the environmental economic community, such as the *Stern Review on the Economics of Climate Change* and the critique of this review advanced by William Nordhaus. As an example of advanced economic modeling of climate change we will examine Christian Traeger's integrated climate assessment model.

Graph Theory and Applications

Overview

This elective introduces students to the problems and techniques of discrete and combinatorial geometry. This area of mathematics is playing an increasingly central role in many applications, from network models of opinion formation in the social sciences to the spread and prevention of diseases in public health, the brain structures that support learning and memory in neuroscience, the search algorithms behind web-based AI, and even the identification and containment of risks in cyber-security. Along the way, the students will be exposed to elements of linear algebra as well as computer systems that support simulations and data analysis of graphs.

Goals

- Identify graph invariants and use them to classify graphs
- Use graphs to model relationship structures between different objects, both concrete and abstract
- Exploit diverse representations of graphs as algebraic objects, using matrices and functions
- Formulate conjectures about graphs, and explore their proofs and refutations
- Investigate asymptotic properties of graphs as they grow in size
- Infer properties of graphs from data using computational tools
- Construct and analyze network models in physical and social science contexts

Homework

Homework will include readings from the textbook *Complex Networks: Principles, Methods and Applications,* by Latora, Nicosia, and Russo, as well as several articles and excerpts from other books. It will also involve writing about mathematical ideas, including ways to communicate our observations about graph properties, construct compelling arguments, and apply them in modeling real-world situations. Finally, homework will involve work in computational environments to simulate graphs and analyze their dynamic evolution. Often homework will be a continuation of classwork. Not infrequently this will entail groupwork, with each student contributing different components of a joint online document. This will also involve preparing in-class presentations and offering comments on peer work.

Assessment

The students will be assessed for their work in classroom activities and homework assignments. Each student will curate a portfolio of their work during the semester, with the teacher's assistance. These portfolios will showcase diverse pieces of work, including the student's contributions to group deliverables, both written and oral. Portfolios will also include the student's online journal, which the students use to record their ongoing observations, conjectures and discoveries, as they engage with all the class activities. These portfolios are individualized artefacts and can include all kinds of work, such as written arguments, videotaped presentations, and computer simulations.

Materials

We will make ample use of the computer, both for in-class activities and homework assignments. Specifically, we will use a variety of math modeling environments, including Matlab and its various toolboxes. We will also have opportunities to practice the use of mathematics typesetting software, including LaTeX.

Microeconomics

Goals

Our course will introduce students to the core questions, models, and tenets of microeconomics. Together, we will analyze the economic rationale and consequences of choices made by consumers, businesses and government within the context of our broader economic system. Our goals for the class are as follows:

- understand consumer behavior, noncooperative game theory, and the limits of economic rationality
- predict and understand firm behavior in terms of price, quantity, market entry, and efficiency
- analyze a variety of market structures including competitive markets, monopolies, and oligopolies
- explore the causes and effects of market failures
- understand the effects of government policies on market outcomes including consumer and producer surplus
- build a strong analytic foundation that will enable successful future forays into the world of economics

Overview & Assessment

Through academic texts, news articles, case studies, and in-class simulations, we will expand our understanding of why economic decisions are made and how to predict and evaluate their far-reaching consequences. Given that the field has been practically reinvented by behavior economists over the past several decades, we will turn a very critical eye to the neoclassical economic view of the world while simultaneously learning of its inner workings. Students will be assessed through a series of problem sets, two written tests, and one market-failures project in which they will be creating economic games in small groups. Day to day, classes will comprise discussions, economic games, and lectures.

Materials

The primary text for this course is *Microeconomics 3rd Edition* by Paul Krugman and Robin Wells. Students are expected to keep this textbook at home aside from the days that they are specifically asked to bring it into class via a Canvas assignment.

How Not to Think Wrong

Overview

This class's units are structured loosely around the supposedly different steps of reasoning: investigating our prior assumptions, gathering evidence, interpretation, argumentation, and action. Though we discuss these steps theoretically, we will analyze throughout the class how these seemingly abstract ideas have real-world effects. This semester, the lens through which we are investigating reasoning is the question "Why aren't we fixing climate change?" The complexity of answers to this question and the importance of answering it help us comprehend how difficult the process of reasoning, argumentation, and action can be.

Throughout the above units, we will be reading broadly from a variety of disciplines, most often psychology, philosophy, and statistics. Topics range from cognitive biases such as the anchoring bias, confirmation bias, endowment effect, etc. to the difficulty of analyzing sources or thinking statistically. Every Friday, beginning mid-September, we also interview members of different disciplines — from history teachers to managers of coffee shops — on what constitutes thinking "correctly" and "incorrectly" in their field.

Goals

This course will be a reading and discussion seminar centered around the questions: "What does it mean to think 'correctly'? Is there a single process or set of steps which could constitute thinking correctly? Do different disciplines necessarily have different methods and definitions of correct thinking? What are the pitfalls of our reasoning, how do we learn about them, and can we correct them?" We will read works in philosophy,

psychology, statistics, linguistics, and more, from the famous *Judgment Under Uncertainty: Heuristics and Biases* to excerpts from the popular math book *How Not to Be Wrong*. We will discuss ideas such as deep canvassing, bias amelioration, and framing. There will be weekly readings, required discussion points, a midsemester essay, and a final project.

The goals of this course are:

- to explore issues in philosophy, psychology, and statistics
- to explore knowledge from various disciplines on the concept of reasoning "correctly" or being incorrect
- to develop the ability to discourse and write rigorously and philosophically
- to develop the ability to perceive and discover issues and facets of arguments at the intersection of interdisciplinary thinking
- to reflect on the intersection of philosophical questions and the effects of such questions on society

Homework & Assignments

Students will have reading assignments most weeks and are required to submit discussion points. Engagement with the reading is the mechanism by which productive discussions can occur in this class. Students will also keep a weekly journal. The class will include a collaborative project around the topic of cognitive biases, an individual essay on analysis of metaphors and narrative structure, and a final project of the student's own design. While this class will provide ample time for writing in class during projects, students may have to finish their work at home some weeks depending on speed or desire. Homework should not exceed 30 minutes per class period.

Assessment

Assessment will be based on willingness to discuss deeply and respectfully and engage in projects fully. Process, effort, questioning, and reflection are valued in the class. Students are invited into the assessment process with individual check-ins before both midsemester and end-of-semester evaluations, during which we discuss their work together.

Interpreting Religions

Overview

This course begins with the assumption that we live in a religiously diverse world. But religions — as the scholar is able to know them — are inextricably linked to all aspects of identity. Through thoughtful engagement with texts (both sacred and secondary sources), films, music, and contemporary events, we will build a foundation of core concepts and research skills that enable students to understand the complex ways that religion influences and is influenced by social, cultural, and historical forces.

We will investigate the six largest religious traditions on the planet — Christianity, Islam, Hinduism, Buddhism, Sikhism, and Judaism — in light of their relationships with institutions like popular culture, science, and the law. Our explorations will build student confidence with the theoretical frameworks and vocabularies of religious studies. Case studies will highlight the diverse lenses through which religious traditions are interpreted as people navigate life.

Applied Molecular Biology "Research Team"

Overview
Biology and related sciences have the challenge of trying to "fix" some very large problems. Among these problems are maternal health, mental health, cancer, hunger, loss of plant life due to global warming, and cardiovascular disease.

When high school students study these world issues it is usually an academic exercise. Students learn about these issues and can propose fixes to them. Rarely do students actually take the next step and test their fixes. This class teaches students how to turn that intellectual exercise into actual bench work. In short, this class is aimed at teaching students how to run translational research.

Goals
The ultimate goal of this class is to teach a student how to run advanced molecular biology experiments. The class begins with a "boot camp" in which students learn basic skills: pipetting, PCR, gel electrophoresis, transformation, primer design, restriction digests, and plasmid creation/basic cloning. Once the students have learned these lab skills, they will do a project in which all skills need to be used to produce a single product. This will hone their bench skills.

Having learned and honed basic molecular biology skills, students will embark on the path of research. Research, in this context, is bench science that is designed to create new knowledge about a particular field. These fields often concern disease, and the projects are run with the support of nearby universities and companies. We will pick these projects later in the semester.

Resources
There are several textbooks available for help. The main one is *Principles of Gene Manipulation and Genomics* (7th edition) by Sandy B. Primrose. In addition to this text we will be using protocols from nearby labs as well as the *Journal of Visualized Experiments* (JoVE).

Assessment
The majority of assessments in this class will be skill-based. For example, students will be asked to accurately pipette and to run gels. We will use *Slack* to monitor how students plan their labs and set goals. Students will also be assessed on their ability to keep lab notebooks.

Time Commitment
Due to the nature of the research we are attempting, students will often have to come into the lab outside of class. For this reason, students will be working in teams. They will have to coordinate schedules and contribute to the work of that team.

Producing a Scientist
This is a lab-heavy class and is best paired with a class that teaches students how to analyze journals and design experiments.

Physics Research

Goals
This course provides an opportunity for students to delve deeply into research topics selected by the U.S. Invitational Young Physicists Tournament (USIYPT) committee. These interesting topics are chosen to be accessible at the advanced high school level and usually require a combination of theoretical, numerical/ modeling, and experimental investigation. The topics vary from year to year but often include phenomena in optics, classical mechanics, fluids, gravitation, and electricity and magnetism. Near the conclusion of the fall

semester, students will summarize their work in the form of presentations to their peers and potentially others in the Nueva community, in preparation for a subset of students to compete in the USIYPT itself. The USIYPT is generally held in late January. Travel to the USIYPT is entirely optional.

Weekly Class Structure — What to Bring

The class meets two or three times a week, always in a laboratory or with lab space available. Examples of tasks that a student might perform include: writing code to simulate the trajectory of an object subject to aerodynamic and gravitational forces, building an apparatus to generate and photograph rainbows formed from different liquids, or constructing a mathematical description of an extended solid object free to rotate about any axis. Extensive quantitative data analysis is also emphasized.

Homework

There will be few if any conventional homework assignments. Students will be expected to conduct background research, work on software, etc. outside of class.

Assessment

I expect to work closely with each student during the course of the semester and have an opportunity to see each student take on a variety of tasks. The template is necessarily general in form. Students will also be evaluated on their final presentations and ability to craft feedback to presentations by others.

Intro to Computer Programming

Overview

Students will practice computational thinking through short projects, including virtual art, game creation, and data analysis, as well as in-class discussions. Projects and assignments will use Python, Javascript, HTML, and CSS to create programs that can easily be shared and tested with real users. The class will culminate in a final project written in a language of the student's choice. The final project could be a game, art piece, web app, or . . . ?

Goals

Students will:

- become proficient with basic programming constructs — variables, loops, conditionals, functions, and lists
- practice breaking down problems and debugging solutions
- become comfortable using existing sources of code and data to create new projects
- learn to courageously explore new tools and seek out additional resources

Homework & Assignments

Most work will be done in class, but students may occasionally finish work at home.

Assessment

Students will be assessed in the following areas:

- programming skill/quality of code
- ambitiousness of final project
- conscientiousness on in-class assignments
- ability to manage setbacks and adjust goals

Assessment will be done through code submissions, teacher observation during in-class work periods, and self-reflection.

Functional Programming

Overview

In this course, students explore a different way of looking at computer science. Functional programming focuses on functions — in the mathematical sense — and their composition and application, rather than data objects that change over time. Pure functional languages don't allow objects to change at all; everything is expressed as a chain of operations that produces a new final output. Writing in this way can make it easier to prove that your programs are correct and to run operations in parallel so that your programs are faster. Through working in these types of languages, students get a better of understanding of the choices made by programming language designers and how those can affect how easy it is to express yourself in these languages.

Goals

All students will:

- learn to apply functional programming constructs appropriately in their projects
- understand how to define and implement data types in a functional programming context
- continue developing their computer programming skills

Homework

Students may need to do some research, brainstorming, or analysis at home. Programming work will be done in class, but students may occasionally need to finish tasks at home.

Assessment

Assessment will be done through code submissions, write-ups or presentations of work, teacher observation during in-class work, and self-reflection.

Computer Security

Overview

This course focuses on the systems and protocols meant to keep electronic data usable only by those who have been granted access by the owner of the data — and how these systems often fail. We'll look at this topic from both ends: how attacks work and how people currently defend against them. The specific topics covered will depend on the interests and backgrounds of the students who sign up, but might include web security, social engineering attacks, authentication protocols, access control, basic cryptography, reverse engineering, binary exploitation, operating system security, network security, and steganography.

Goals

All students will

- understand how to assess the security threats to a particular system
- understand how to choose appropriate tools to mitigate security threats
- grapple with the ethical and legal issues that arise in computer security work
- continue developing their computer programming skills

Homework

Students may need to do some research, brainstorming, or analysis at home. Programming work will be done in class, but students may occasionally need to finish tasks at home.

Assessment

Assessment will be done through code submissions, write-ups or presentations of work, teacher observation during in-class work, and self-reflection.

Machine Learning

Overview

We are currently generating huge amounts of data about any number of aspects of life on Earth, at a rate well beyond the capacity of humans to absorb. How can we use machines to learn from these datasets and make predictions or decisions about the future? In this class, we explore a number of different data analysis techniques, from simple regression to more complicated recurrent neural network structures. For each of these, we'll discuss what different types of questions we can answer and what requirements our data encoding must meet. We will examine the ethical issues that might arise in training models on large datasets. The class will focus on the use and high-level understanding of machine learning methods, but students with more math background may choose to delve into the underlying mathematical definitions as well.

Goals

All students will:

- understand how to use and choose between a variety of machine-learning algorithms
- understand how to represent problems and gather data for use in machine-learning tasks
- grapple with the ethical issues that arise in machine-learning work
- learn how to communicate data science results
- continue developing their computer programming skills

Homework

Students will need to do some research, brainstorming, and analysis at home. Programming work will be done in class, but students may occasionally need to finish tasks at home.

Assessment

Assessment will be done through code submissions, write-ups or presentations of work, teacher observation during in-class work, and self-reflection.

Intro to Programming and Data Analytics

Overview

This class will teach an introduction to data analysis and statistics using the Python programming language. Students will learn how to use programmatic tools to load, clean, and analyze a dataset. We will cover common statistical methods as well as models. For class projects, students will be asked to deliver a written and oral presentation of inferences drawn from a dataset they will receive. Students will learn the basics of statistical modeling and data analysis by working on real-world datasets.

Goals

All students will:

- understand how to programmatically inspect, clean and visualize data
- learn basic statistical inferential techniques
- learn how to communicate results via visual and oral presentations
- learn the basics of computer programming in Python

Homework

Students may need to do some research, brainstorming, or analysis at home. Programming work will be done in class, but students may occasionally need to finish tasks at home.

Assessment
Assessment will be done through code submissions, write-ups or presentations of work, teacher observation during in-class work, and self-reflection.

CAD for Manufacturing

Overview
From basic CAD to advanced parametric modeling, this class will dive deeply into Autodesk Fusion 360 and how it can be used for advanced modeling, rendering, and assemblies. We will discuss best practices for designing for specific manufacturing techniques including 3-D printing, sheet metal, and CNCs. We will also learn and practice with advanced tools such as lofting, 3-D sketching, relational assemblies, and more. This course is designed to take students from basic introductory CAD practices all the way to advanced techniques.

Goals
All students will:

- learn 2-D sketching with an emphasis on relationships and best practices
- practice 3-D modeling everything from rectilinear to organic shapes using geometric modeling, advanced lofting, and 3-D sketching techniques
- learn assemblies using designed and imported parts as well as animation and offsite rendering methods
- understand best practices for designing for various methods of manufacturing with an overall emphasis on additive and subtractive manufacturing

Homework
Homework will be about 1 hour a week and will occasionally require the use of tools in the I-Lab.

Assessment
Assessment will be based on class presentations, teacher observation, design implementation, tool use, and self-reflection.

Intro to Product Design

Overview
From the kitchen sink to the newest self-driving car, product designers are making deliberate decisions that will affect not only our interactions with manufactured objects, but our feelings towards them as well. This course will give students the opportunity to grapple with the same dilemmas as modern designers by working as a background liaison between company and consumer to make a product that is thoughtful, seamless, and poignant. The first semester of the class will be structured to allow a full work cycle on 2 or 3 large projects, while the second semester will be entirely dedicated to a single focus. Projects may include wearable technology, furniture design, homewares, and educational toys. In order to maximize the use of the I-Lab and shop during class time, preparation work will mostly be done outside of class. Students will be required to maintain a physical or digital design journal and present their design process to the class.

Goals

- Introduce students to visual literacy so that they may be able to better interpret the products around them
- Give students a chance to create a functioning “looks-like” prototype
- Help students conduct background research around available markets, manufacturing, materials, cost, etc.
- Allow students to practice bringing abstracted concepts and ideas into their work so as to leverage the emotions of their user

- Teach students to design holistically for a specific user and space
- Teach students how to use various tools in the I-Lab to manufacture their prototypes on a professional level

Homework
Homework will be about 1 hour a week and will often require the use of tools in the I-Lab.

Assessment
Assessment will be based on class presentations, background research, teacher observation, research modules, design completeness, and self-reflection.

Building Electric Bikes

Overview
This class will take students through the process of designing and building an electric bike, from choosing and ordering components to fabrication, wiring, and assembly. Students will work in small teams to take a bike from a bare frame to a complete, custom-built electric bike by the end of the semester. The bikes will then be available for bidding at the Nueva Auction in the spring and proceeds will go towards the Nueva Tuition Assistance Program.

Goals
- Give students the opportunity to complete a large product-oriented, saleable project in a short time
- Create hands-on learning experiences around fabrication, motors, and high-voltage electrical systems
- Collaborate in teams and have students responsible for all aspects of a build
- Learn more about designing for a specific theme and user type as well as usability and manufacturability

Homework
Homework will be about 1 hour a week and will often require the use of tools in the I-Lab.

Assessment
Assessment will be based on class presentations, teacher observation, team participation, research modules, design completeness, and self-reflection.

Engineering and Fabrication Workshop

Overview
In this course students have the choice to either pursue their own independent projects under the guidance and supervision of I-Lab faculty or to work their way through a series of semi-structured skill-building activities developed to build confidence and fabrication skills in the I-Lab environment. These guided activities will develop fabrication skills, including laser cutting, vinyl cutting, carpentry, metal machining, welding, electronics, and programming.

Goals
- Develop a working familiarity with one or more tools or fabrication processes
- Gain confidence in turning ideas into reality
- Acquire subject matter knowledge in chosen area of study through targeted research and experimentation
- Practice brainstorming, prototyping, and iteration
- Produce high-quality work products through critique and iteration

Homework
Students will complete weekly reflections and provide evidence of their progress and process on their digital portfolio.

Assessment
Assessment will be completed through design reviews, peer critique, presentations of work, teacher observation, and self-reflection.