Additional Credit Classes

**Senior Capstone**

**Mindful Leadership**
Jake McDonald, Collin McConaghy
Rising 12th Graders
July 6-31 • 9 a.m.-1:30 p.m.
Monday-Friday
$1,095

How can the practice of mindfulness enhance emotional intelligence and leadership skills, while maximizing the ways in which we connect with others and positively impact our community and beyond?

The Mindful Leadership senior Capstone course will begin with a focus on the attitudes of mindfulness according to Jon Kabat-Zinn. Students will establish a mindfulness practice as a foundation for sustainable mental well-being, elevated performance and enhanced clarity of individual values, goals and passions. The outward manifestation of this mindfulness practice is authentic leadership, and students will discover different leadership styles and qualities, discuss how teams best operate, and learn the value of empathy, inclusion and non-judgment in a collaborative environment. In addition to learning about how teams best operate, we will learn about and discuss inclusion and the role of biases, empathy, “othering” and non-judgment as they pertain to productively connecting with a diverse population of people. Students will connect with, and learn from, various leaders and organizations that embody mindful leadership and use the current COVID-19 pandemic to study unique challenges that organizational entities are facing, utilize design thinking to best address these issues, and then develop a tangible action plan to make a positive impact, big or small.

For more information, contact Jake McDonald at jake_mcdonald@collegiate-va.org.
Fine Arts Class

**Music Theory and Aural Skills**  
Bryan Hooten  
Rising 10th-Rising 12th Graders  
June 22-July 17 • 9 a.m.-1:30 p.m.  
Monday-Friday  
*No class on Friday, July 3*  
$1,095

**Prerequisite:** Enrolled in an ensemble or private lessons

In Music Theory and Aural Skills, students will explore the melodic, harmonic and rhythmic idiosyncrasies of Western art music, jazz, hip-hop and various other genres through listening, analysis and composition. This college-level course will begin by offering students the opportunity to solidify their knowledge of melodic and harmonic intervals through dictation, playing on their instrument and singing. Students will then combine these intervals to create melodies and harmonies that creatively emulate a variety of musical styles. This deeper understanding of pitch frequency will illuminate the understanding of rhythm or the relative frequency of musical events. At the conclusion of the course, students will compose, perform and record examples of diatonic melody, four-part harmony and melody plus accompaniment. They will also collaborate on compositions to be played by members of the course. To achieve these goals, students will learn the fundamentals of Finale Music Notation Software and the Digital Audio Workstation of their choice.

Bryan Hooten (B.M., University of Southern Mississippi; M.M., Virginia Commonwealth University) has taught music for more than 15 years and has experience teaching students from 4th Grade through university level in disciplines such as Music Theory, Jazz Band and Concert Band. He records and performs internationally with No BS! Brass and Spacebomb Records and is an active composer and arranger in a variety of styles. He is passionate about empowering students to perceive deeply and create spontaneously.

For more information, contact Bryan Hooten at bryan_hooten@collegiate-va.org.
This one-semester half-credit course presents literary and film “classics” and proposes that what makes a work of art “great” or “worthy” is the presence of structural design and complexity. The “great works” we read and examine — through discussion, quizzes, projects and papers — are Shakespeare’s Hamlet, T.S. Eliot’s poetry, short stories by William Faulkner and James Joyce, the “Odessa Steps” sequence from Sergei Eisenstein’s 1925 film Battleship Potemkin, Carl Dreyer’s 1928 film, The Passion of Joan, Alfred Hitchcock’s Rear Window and Ian McEwan’s novel Saturday. Students learn to distinguish moments of virtuosity and craft — and moral significance — as they become more aware of a writer’s and filmmaker’s use of compositional technique. For instance, students notice patterns and movement in the diction, metaphorical allusions and musical rhythms of Hamlet’s soliloquies; they notice the dead-end syntax in the sentences of Joyce’s short stories that depict Dublin’s paralysis, and they observe the repetition and symmetries of visual symbols in Hitchcock. All in all, they develop a way to see and value artistic choices of design and craft.

Students use a number of resources to facilitate these discoveries — secondary sources, such as essays by writers such as Joyce Carol Oates and New York Times movie critics, and film interviews of Hitchcock discussing film craft.

The assessments include reading quizzes, short analysis papers and a research project that culminates in students curating and presenting their own virtual museum of “great works.” Honors students choose from an array of project options in order to explore new media. Among these options are filmmaking, recitation of long passages of poetry or of Hamlet soliloquies, songwriting, or giving an oral presentation of a scholarly close reading of a passage from a novel or a scene from a film.
Throughout the course we are present not only to the overarching question, *What is so great about “great works”?* but also the question, *What does it mean to choose?* The works on the list all situate characters before a moment of choice. Using 20th century psychologist and sociologist Abraham Maslow’s hierarchy as a context, we discuss the relationship between human agency and fulfillment, noting, with Maslow, that self-actualization, as an artist, as a fictional character, and even as a student, depends upon being present to the possibility of choice. The alternative results in clichés, boredom, paralysis and/or victimization. Finally, excellence and virtue emerge from acts of vision, will and desire as well as acts of intentional craftsmanship.

Mil Norman-Risch serves as Upper School Department Chair. She has taught at Collegiate School for more than 30 years.

For more information, contact Mil Norman-Risch at mnormanr@collegiate-va.org.

**Health and Wellness Class**

**Health and Wellness II - Drivers Education and Fitness & Nutrition**

Mark Palyo  
**Rising 10th-Rising 12th Graders**  
**June 22-July 3 • 8:30 a.m.-3 p.m.**  
**Monday-Friday**  
$570

Drivers Education: Classroom instruction is a key part of securing a driver’s license. Taking this class in the summer frees up time in the fall or spring for other pursuits. This Driver’s Education course completes the classroom requirement needed by a student to obtain a driver’s permit in Virginia.

Fitness and Nutrition: This is a required course for Upper School Collegiate students to meet the requirement for one-half of Health and Wellness II. Taking this class in the summer frees up time in the fall or spring for other pursuits. This two-week, ¼-credit summer course will cover various aspects of nutrition and fitness. Students will study nutrition related to current events, how nutrition relates directly to health, the nutrition tools that are available on a daily basis and how the digestive and immune systems work. We will also examine the main food nutrients such as carbohydrates, lipids, proteins, vitamins, minerals and water. Participants will be able to plan a healthy diet and explain how food and fitness relate directly to energy and a healthy body.

For more information, contact the Summer Quest Office at summerquest@collegiate-va.org.

**History Class**
The objective of this course is two-fold: 1) To introduce students to the academic study of religion and 2) To survey various topics within the historical, literary and philosophical traditions of the world’s major religions.

We will begin by asking some fundamental questions. What is the meaning of religion? What does it mean to be human? What is the relationship between consciousness and religion? Are human beings as human beings necessarily religious beings? In other words, we will consider the possibility that religion is a universal phenomenon — perhaps even a necessary one — in human life.

Then, in attempting to survey some of the Bible and some parts of the world’s major religious traditions, we will give some attention to historical and cultural settings, but we will also emphasize the reading of sacred texts and other critical primary source material in order to grasp something of their insight into the basic religious questions. It is hoped that each student will attain an objective yet sympathetic understanding and appreciation of religion and its role in human affairs.

Brian Justice began teaching in 1992, and he has taught religion and history at Collegiate School since 1996. He has taught and coached with Summer Quest since 1996.

For more information, contact the Summer Quest office at summerquest@collegiate-va.org.
Mathematics Class

**Honors Statistics**
Karen Albright
Rising 10th-Rising 12th Graders
June 22-July 17 • 9 a.m.-1:30 p.m.
Monday-Friday
No class on Friday, July 3
$1,095

**Prerequisite:** A- or better in Honors Algebra 2 or Precalculus or B or better in any other Honors math course.

Upon return visits to Collegiate it is not unusual to hear former students say, “I so wish I had taken statistics while at Collegiate.” Understanding statistics is so important in today’s world and is a required college course for many majors. For current high school students having trouble fitting statistics into the school-year schedule, this course is the answer. The half-credit Honors Statistics course will cover the material from the first semester of AP Statistics. Content will include describing data, regression analysis, sampling and experimental design, probability models, and sampling distributions. Hands-on data collection activities will be used to introduce each new topic. Students wishing to receive AP credit will need to take the second half of AP Statistics in the spring semester. A student may not receive credit for both Honors Statistics and Stats/Applied.

Karen Albright has 36 years of teaching experience, with the last 23 years at Collegiate School. She currently serves as the Chair of the Mathematics Department and has 14 years of experience teaching AP Statistics.

For more information, contact Karen Albright at kalbright@collegiate-va.org.
Science Classes

Astronomy through an Historical Lens
Stew Williamson
Rising 9th-Rising 12th Graders
June 8-July 2 • 9 a.m.-1:30 p.m.
Monday-Friday
No class on Friday, July 3
$1,095

For thousands of years, humans have been exploring our relationship in the universe and our beliefs about the sky have guided our societies and cultures. Scientific discoveries and technological advancements have progressed our understanding of space; from Ptolemy to Kepler to the Hubble Space Telescope to the observations of planets around other stars. In this course, we will explore the progression of these astronomical discoveries and their impact on our world. Students will complete research projects on astronomical progress through the centuries, as well as current and future explorations across our solar system and the universe. There will be optional evening viewings conducted through Zoom, weather permitting.

We will meet daily for direct instruction, discussion and presentations. These meetings will be virtual. There will be synchronous and asynchronous learning opportunities based upon the topics covered. Students are not expected to have a telescope, but will make nighttime observations, preferably away from city lights.

Stew Williamson has 24 years of science teaching experience, with the last six years at Collegiate School. He currently serves as the Chair of the Science Department, and this will be the second time that he has taught this course.

For more information, contact Stew Williamson at stew_williamson@collegiate-va.org.
**Organic Chemistry**  
Leigh Thompson  
Rising 10th-Rising 12th Graders  
June 22-July 17 • 9 a.m.-1:30 p.m.  
Monday-Friday  
No class on Friday, July 3  
$1,095  
**Prerequisite:** Chemistry or Honors Chemistry

How does aspirin work? Are artificial sweeteners bad for you? Is there an efficient way to recycle and reuse plastics? These are a few of the questions you will consider in this course. Organic chemistry is the study of carbon-containing molecules. Carbon is unique in that it can form chains and rings with other carbon atoms, and it is essential to life as it forms the backbone of DNA, RNA, sugars, lipids and proteins. This course will cover nomenclature, reactions and organic mechanisms through a variety of modalities including problem-solving, case studies and laboratory investigations.

Leigh Thompson has 27 years of experience teaching all levels of Chemistry, both college and secondary. She has been at Collegiate School for four years and is currently teaching AP Chemistry and regular Chemistry.

For more information, contact Leigh Thompson at leigh_thompson@collegiate-va.org.

**Physics II: Light and Sound**  
Greg Sesny  
Rising 10th-Rising 12th Graders  
June 8-July 2 • 9 a.m.-1:30 p.m.  
Monday-Friday  
No class on Friday, July 3  
$1,095  
**Prerequisite:** Students currently registered to take Physics or Honors Physics in fall 2020 are eligible to take this course.

This semester course aims to broaden and deepen students’ understanding of how the universe works through the study of topics not covered in the first-year Physics course, at a mixed regular/honors level depending on the unit. The core of this course is centered on understanding electromagnetic radiation from both the classical and quantum perspective, and hence this course will give students a very solid introduction to quantum theory that will complement that covered in AP Chemistry. In addition to the interactions of light with matter, we will look at wave motion in general and apply wave theory to sound, hearing and musical instruments. Additionally, we will discover the physics of things like the eye, lasers, fiber optic
cables and rainbows. Students who plan on taking the SAT subject test in Physics should take this course.

A 20-year veteran of educating students both in and out of the classroom, Greg Sesny has just completed his fifth year teaching Physics and Honors Physics at Collegiate School. His enthusiasm for his subject has helped to spark student interest in taking the AP Physics 1 exam, which has increased from two to three students taking the test each year to more than 20 the past two years. Greg is also a cofounder of Collegiate's very successful FRC Robotics Team, which in just a few short years, has amassed several wins and earned a berth in the World Championships twice. Greg takes great pride in seeing the content being delivered in the Physics classroom applied to real-world situations.

For more information, contact Greg Sesny at greg_sesny@collegiate-va.org.

**Programming for Mobile Devices**
Kristine Chiodo
Rising 10th-Rising 12th Graders
July 6-31 • 9 a.m.-1:30 p.m.
Monday-Friday
$1,095

In this course, students will design and implement a variety of programs to be used on Android mobile devices using MIT App Inventor. Students will design user interfaces, develop code and test programs on mobile devices. This course will introduce students to programming concepts including the use of variables, lists, mathematical and logical operations, iteration and decision structures and functions, as well as topics specific to mobile apps, such as graphic interface components, event-based programming and sensor data. Students will work individually and collaboratively to plan and program mobile apps, including apps for entertainment and functionality. Students will also learn the process of publishing apps for use by the public, the value of apps and regulations regarding the sharing and selling of programs.

Kristine Chiodo has taught math and computer science for 29 years, the last five years at Collegiate School. She has taught AP Computer Science Principles for four years and has been an AP grader for the course for four years as well.

For more information, contact Kristine Chiodo at kristine_chiodo@collegiate-va.org.
Science Inquiry and Exploration (¼ credit: 40 contact hours)
Sandra Marr
Rising 9th-12th Graders
June 15-18   9-11:30 am
July  6-9    9-11:30 am
July 13-16   9-11:30 am
Aug. 10-13   9-11:30 am
Monday-Thursday (4 weeks)
$570 + materials
Prerequisite: Interest and motivation in conducting an independent science experiment for competition and publication.

In this summer course, students in rising 9th through 12th Grades will conduct independent experiments in science at home or in approved field sites, deepening and extending their skills in experimental design, data analysis, scientific writing and presentation. This hands-on, deep dive into an area of personal interest is a perfect way to launch a science portfolio, engage with scientists in the student’s field of interest and connect with real-world questions and solutions. All students will remotely present their findings to a panel of invited guests and write a peer-reviewed science paper for submission to 2021 science competition(s) and for publication. Students will receive individualized mentorship and support online for the inquiry direction of their choice.

Sandra Marr (B.S. in biology, Carnegie Mellon University; M.S. in environmental science, University of California, Berkeley) has more than 20 combined years of science teaching experience in public and independent school settings for preschool through university students. She is passionate about nurturing students’ science curiosity and empowering them to ask their own questions.

For more information, contact Sandra Marr at sandra_marr@collegiate-va.org.