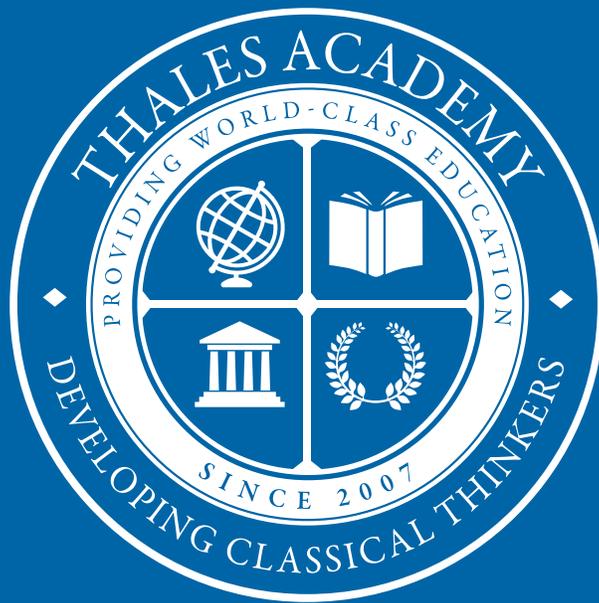


2020–2021

---



---

## COURSE CATALOG

JUNIOR HIGH & HIGH SCHOOL

## ACADEMIC POLICIES

### OUR MISSION

The mission of Thales (THAY-LEEZ) Academy is to provide an excellent and affordable education for students in Pre-K to 12th grades through the use of Direct Instruction and a Classical Curriculum that embodies traditional American values. Thales provides a rigorous academic environment that fosters ethical behavior, critical thinking, virtuous leadership, lifelong learning, and truth seeking with a firm foundation in cognitive, non-cognitive, and technical skills. As a result, Thales Academy students are well prepared to succeed in higher education, career, and life while positively impacting the world around them.

### CORE CLASSES

All students in grades 6 through 12 take eight classes each day, six of which are core classes. Core subjects include Math, Science, History, Literature, Foreign Language and Trivium. All core classes are year long courses. In addition, all students in grades 6th–9th grade take a PE/Health/Technology class where students rotate throughout the year in those subjects. After students complete their PE/Health/Technology credit in 9th grade, they progress into a college advising class for their 10th, 11th, and 12th grades.

### ELECTIVE OPPORTUNITIES

Thales Academy offers elective courses in grades 6 through 12. These offerings vary by campus and are dependent upon faculty availability, scheduling, and enrollment. Both year-long and semester long courses are available to students.

### EARNED CREDITS

A “credit” is given for the successful completion of a course. To receive a credit, the following criteria must be met:

- An A, B, C, or D earned as the final average grade in the course
- A minimum of 130 hours of instructional time per credit earned

### GRADING SCALE

Students are evaluated on personal/social growth, work habits and material outlined in the Thales Academy Classical Curriculum. Progress is evaluated on the following scale:

- A: 100–90
- B: 89–80
- C: 79–70
- D: 69–60
- F: 59–0

**GPA SCALE**

This scale was updated to reflect a more fair and equitable measurement of our Standard, Honors, and Advanced Placement courses offered in grades 9 through 12. It reflects the veracity of the classical program offered at Thales Academy, which places more emphasis on critical thinking and engagement with primary texts. GPAs are calculated by dividing the final course grade by the total number of quality points earned. This result is round to three decimal places.

NUMERICAL AVERAGE	LETTER GRADE	STANDARD WEIGHTING	HONORS WEIGHTING	AP WEIGHTING	NUMERICAL AVERAGE	LETTER GRADE	STANDARD WEIGHTING	HONORS WEIGHTING	AP WEIGHTING
100	A	4.55	5.55	6.55	79	C	2.90	3.90	4.90
99	A	4.50	5.50	6.50	78	C	2.80	3.80	4.80
98	A	4.45	5.45	6.45	77	C	2.70	3.70	4.70
97	A	4.40	5.40	6.40	76	C	2.60	3.60	4.60
96	A	4.35	5.35	6.35	75	C	2.50	3.50	4.50
95	A	4.30	5.30	6.30	74	C	2.40	3.40	4.40
94	A	4.25	5.25	6.25	73	C	2.30	3.30	4.30
93	A	4.20	5.20	6.20	72	C	2.20	3.20	4.20
92	A	4.15	5.15	6.15	71	C	2.10	3.10	4.10
91	A	4.10	5.10	6.10	70	C	2.00	3.00	4.00
90	A	4.00	5.00	6.00	69	D	1.90	2.90	3.90
89	B	3.90	4.90	5.90	68	D	1.80	2.80	3.80
88	B	3.80	4.80	5.80	67	D	1.70	2.70	3.70
87	B	3.70	4.70	5.70	66	D	1.60	2.60	3.60
86	B	3.60	4.60	5.60	65	D	1.50	2.50	3.50
85	B	3.50	4.50	5.50	64	D	1.40	2.40	3.40
84	B	3.40	4.40	5.40	63	D	1.30	2.30	3.30
83	B	3.30	4.30	5.30	62	D	1.20	2.20	3.20
82	B	3.20	4.20	5.20	61	D	1.10	2.10	3.10
81	B	3.10	4.10	5.10	60	D	1.00	2.00	3.00
80	B	3.00	4.00	5.00	59-0	F	0.00	0.00	0.00

**ADVANCED PLACEMENT CREDIT (AP)**

Thales Academy offers a number of advanced placement courses for high school students. These offerings are dependent upon faculty availability, scheduling and enrollment, but may also be taken independently through school-selected blended learning programs. The goal of the Thales Academy AP Program is to offer any student who exhibits exceptional ability or the promise of exceptional ability the opportunity to reach his or her maximum potential. These rigorous and demanding courses are intended to develop students capable of completing college-level coursework and to help those students recognize and attain earlier access to advanced opportunities. In order to encourage placement in the most productive learning environment, the AP faculty recommend that students fulfill certain prerequisites before enrolling in a Thales Academy AP course. Students who are interested in taking an AP course

are encouraged to discuss the possibility with AP faculty members. All AP students must complete the AP exam for their respective courses. Students who satisfactorily complete an Advanced Placement course will receive 2.0 additional quality points to their standard GPA.

### HONORS CREDIT

Thales Academy offers Honors options for many of the courses available in grades 9 through 12. These offerings are dependent upon faculty availability, scheduling, and enrollment. The goal of Thales Academy's Honors Program is to offer any student who exhibits exceptional ability or the promise of exceptional ability the opportunity to reach his or her maximum potential. These rigorous and demanding courses are intended to challenge students to complete robust coursework and to help those students recognize and attain earlier access to advanced opportunities. Admission to Honors level courses is earned through teacher recommendation. Students who satisfactorily complete an Honors level course will receive 1.0 additional quality points to their standard GPA. Eligibility for Honors classes are below.

### GRADUATION REQUIREMENTS

In order to successfully graduate from Thales Academy, all graduation candidates must complete and satisfactorily pass the following minimum high school core requirements:

- History (The Near East & the Greek World, Rome & the Medieval World, Western Civilization, and American History & Government)
- Literature (Literature of the Near East & the Greek World, Literature of Rome & the Medieval World, Western Literature, and American Literature)
- Mathematics (Four high school years of mathematics coursework with a minimum requirement of Algebra I, Geometry, Algebra II, and Pre-Calculus)
- Science (Earth Science, Biology, Chemistry, and Physics)
- Trivium (Research, Writing, & Rhetoric; Socratic Logic; Philosophy & Ethics; and Senior Seminar)
- PE & Health (One high school year)
- Language (Four high school years of Spanish or Latin)
- Electives (Four high school years; Student's choice)

*In order to satisfactorily pass Senior Seminar, all seniors must research, write, and defend an original senior thesis prior to graduation.*

### COMMUNITY SERVICE HOURS

High school students who attend Thales Academy are required to complete a total of 100 hours participating in community service as a graduation requirement. Students are encouraged to complete a minimum of 25 hours per high school year with the option of completing all of their community service hours at any time in the course of grades 9 through 12. Students who enter Thales Academy in the middle of their high school career must complete a minimum of 25 hours per school year until graduation. The requirement may be fulfilled in a variety of ways; however, students are encouraged to gain pre-approval of activities prior to completing them. Students must provide documentation of service hours by filling out a community service form. Students should be involved in activities that are volunteer opportunities only. Thales Academy hopes to promote a feeling of community, citizenship, and growth in character through this requirement.

**JUNIOR HIGH COURSE OF STUDY**

SUBJECT	6TH GRADE	7TH GRADE	8TH GRADE
History	Ancient & Classical History	Western Civilization	American History & Government
Literature	Ancient & Classical Literature	Western Literature	American Literature
Mathematics	Saxon 7/6 Saxon 8/7 Pre-Algebra	Saxon 8/7 Pre-Algebra Algebra I	Pre-Algebra Algebra I Geometry
Science	Earth Science	Life Science	Physical Science
Trivium	Grammar	Grammar & Formal Logic	Formal Logic & Informal Fallacies
Latin	Introduction to Latin	Latin 1A	Latin 1B
PE, Health, & Digital Citizenship	PE, Health, & Digital Citizenship	PE, Health, & Digital Citizenship	PE, Health, & Digital Citizenship
General Elective(s)	Student Choice	Student Choice	Student Choice

**HIGH SCHOOL COURSE OF STUDY**

SUBJECT	9TH GRADE	10TH GRADE	11TH GRADE	12TH GRADE
History	The Near East & the Greek World	Rome & the Medieval World	Western Civilization	American History & Government
Literature	Literature of the Near East & the Greek World	Literature of Rome & the Medieval World	Western Literature	American Literature
Mathematics	Algebra I Geometry Algebra II	Geometry Algebra II Pre-Calculus	Algebra II Pre-Calculus AP Calculus AB	Pre-Calculus AP Calculus AB AP Calculus BC Statistics
Science	Earth Science	Biology	Chemistry	Physics AP Physics
Trivium	Research, Writing & Rhetoric	Socratic Logic	Philosophy & Ethics	Senior Seminar (includes Senior Thesis)
Foreign Language	Latin II or Spanish I	Latin III or Spanish II	Latin IV or Spanish III	AP Latin or Spanish IV
PE & Health	PE & Health	N/A	N/A	N/A
Luddy Institute of Technology	Fundamentals of Engineering Design	Principles of Engineering	Engineering Applications	Engineering Design Project
General Elective(s)	Student Choice	Student Choice	Student Choice	Student Choice

**PSAT**

In mid-October each year the PSAT is given at Thales Academy. The Preliminary SAT/National Merit Scholarship Qualifying Test (PSAT/NMSQT) is a standardized test that provides first-hand practice for the SAT which measures a student's skills in reading, writing, language, and

mathematics. The PSAT/NMSQT is an important first step toward college admission. Test results and their accompanying analysis are valuable tools that can help prepare students for the SAT and education opportunities beyond high school.

### **CLASSICAL LEARNING TEST**

The Classical Learning Test (CLT) will be administered to all students in grades 9-11. The CLT is a standardized assessment that measures a student's ability to reason on this or her propensity for academic success. This assessment provides insights to colleges and universities that demonstrate the rigor of a Classical Curriculum.

**GRADES 9-11**

### **MIDTERMS & FINAL EXAMS**

Midterms will be given to all students in grades 9 through 12 at the end of fall semester and final exams will be given to high school students at the end of the spring semester. All exams count as two test grades in their respective course area. The instructor of the course creates both the midterm exam and the final exam; however, all final exams are common between all 9-12 campuses. AP Exams are counted as final exams for any class but will not be factored into the final average. Some courses require exams tied to performances, long-term projects, and other non-traditional exam types. Any senior that has an overall A average for the year in a course will be exempt from his or her final exam.

### **REPEATING COURSE POLICY**

If a student does not pass a course and does not earn credit for that course, he/she may retake the course. Thereafter, if the course is passed, both grades are factored into the student's overall GPA, and credit is earned. Any course required for graduation must be taken again if not passed the first time.

### **WITHDRAWAL FROM A COURSE**

Withdrawal from a course after the first ten days of school would result in the course being recorded on the student's transcript as either a Withdrawn Passing (WP) or Withdrawn Failing (WF). No credit is earned if a student withdraws from a class mid-year.

### **MATH HONORS CREDIT**

Honors Credit for math will only be applied for students working above grade level in their math coursework during high school. Above grade level math courses will be offered based on the determination of campus administration as they consider availability within the campus schedule and student needs.

### **SENIOR THESIS PROJECT**

To graduate from Thales Academy, all seniors will write a cumulative paper of 15–25 pages in length (excluding addenda, bibliography, and endnotes). This cumulative paper is intended to provide space for the Thales Academy graduate to demonstrate his or her understanding of the Top 15 Outcomes, the Western Tradition, and the skills of scholarship attained through his or her education.

### HONORS AND AP RECOMMENDATION PROCESS

Teacher recommendations are required in order for students to enroll in an advanced-level course. Recommendations are required as a means of ensuring students who demonstrate a need for acceleration are placed in an academic setting with the appropriate level of challenge and rigor. Please consider the recommendation of your child's teacher respectfully. Students seeking enrollment in an Honors or Advanced Placement must meet the following criteria in order to receive a recommendation for the course. Students will not be permitted to enroll in an Honors or Advanced Placement course without a teacher recommendation signifying successful achievement of this criteria.

The AP faculty strongly urges students and their parents to attend an orientation meeting and/or speak personally with the appropriate instructor in order to be fully informed of the expectations associated with an AP course before enrolling. All students are expected to take the AP exam for that course when they are administered in the Spring Semester. The final grade for the course will appear on final report cards and transcripts, with a notation that the course was taken online. AP courses will be listed on transcripts, and will be included in cumulative GPA calculation and class rank.

### AP/HONORS CONSIDERATIONS

AP/Honors considerations will be based on a student's ability to do the following:

- Demonstrates consistent work completion and submission that reflects his or her own words, thoughts, and skills, as well as a high level of personal effort that results in proficiency in content knowledge
- Regularly participate in class activities and seek meaningful interactions with peers
- Consistently display behavior which demonstrates a desire to work collaboratively to support a productive learning environment
- Submit assignments on or before the due date
- Independently read and analyze texts within that subject area
- Maintain an overall course average of 90% or above

All recommendations will be reviewed again by teachers at the conclusion of the school year. Students recommended for AP/Honors courses are expected to maintain their performance in order to maintain their recommendation.

## HISTORY

### ANCIENT & CLASSICAL HISTORY

This course traces the history of Ancient Mesopotamia, Egypt, India, China, Greece, and Rome from the rise of the world's first civilizations in Mesopotamia circa 4,000 BC to the fall of the Roman Empire in AD 476. This course will trace the beginnings of civilization, including the inventions of farming, the wheel, and writing. Starting with following the development of small city-state into powerful empires, this course will focus on growth of trade, commerce, industry, and the cultural, religious, and philosophical innovations of the ancient Near East and Greco-Roman world. It will provide an in-depth look at the great historical figures and

6TH GRADE

average people that helped shape and define these eras. The topics covered in Ancient and Classical History will include the first farmers; the first forms of writing; the first city-states in ancient Sumer; the first nation-state, Egypt, and its great pharaohs; and the histories of ancient China, India, Africa, the Israelites, the Medes, the Persians, the Greeks, and, at the end of the year, and the Romans.

### **WESTERN CIVILIZATION**

This course details the history of Europe from the breakup of the Roman Empire and the development of European nation-states to the nations of the 21st century. It will study the political, economic, social, and cultural development of the three successor civilizations of classical Greece and Rome: Byzantium, Islam, and Western Christendom, with particular emphasis on the last. This course will examine the development and interactions of these civilizations in both peace and war. The topics covered in Western Civilization include: the end of the ancient world, the rise of Christianity, the era of Germanic migrations, the Germanic West, the Catholic Church in the West, the Carolingian Empire, the 9th century invasions, feudalism and manorialism, the Byzantine Empire, the rise of Islam, the Crusades, the development of medieval kingdoms and nation-states, class structure in the Middle Ages, the Renaissance of the high Middle Ages, the Mongol invasions, the beginnings of the Reformation, the Wars of Religion, the Scientific Revolution and Enlightenment, the long 19th century, World War I and II, the Cold War, and the European Union. It will also assess the impact of these and other aspects of Europe's origin on today's world.

**7TH GRADE**

### **AMERICAN HISTORY & GOVERNMENT**

This course contextualizes American culture as part of Western civilization. This survey course will begin with the Colonial period and the founding of the nation and will extend into the present day. Throughout the course standards, there will be some overlap of time periods to allow for teacher flexibility to address the complexity of these topics and events. The focus of this course provides students with a framework for studying political, social, economic, and cultural issues, and for analyzing the impact these issues have had on American society. In addition, American History & Government provides an in-depth look at the United States Constitution and Bill of Rights. Students will further examine the historical beginnings of our governmental framework and analyze the intentions of our Founding Fathers.

**8TH GRADE**

### **THE NEAR EAST & THE GREEK WORLD**

This course details the history of the ancient Near East, Egypt, India, China, and Greece, from the rise of the world's first civilizations in Mesopotamia to the conquest of the known world by Alexander the Great in 323 BC. This course will trace the developments needed for complex civilizations to arise, including the immense agricultural productivity of river valleys; the development of writing systems; the growth of trade, commerce, and industry; cultural trends and religious and philosophical innovations; and the great historical figures that helped shape and define these eras. The topics covered in this course will include the Neolithic Revolution; the birth, development, rise and fall of civilization in ancient Sumer; the unification of Egypt and the principal pharaohs of its Old, Middle, and New Kingdom epochs; the rise of territorial states in China and India; the emergence of Indo-European peoples including the Mycenaean Greeks and Hittites; the history of the Israelites according to the Hebrew Bible and archaeology; the political, commercial, and diplomatic relationships between states during the Late

**9TH GRADE**

*1.0 Credit; Honors Available*

Bronze Age and its disintegration; the rise and fall of the Neo-Assyrian, Neo-Babylonian, and Persian Empires during the Iron Age, and the indelible mark all of these peoples have left on our world today.

### **ROME & THE MEDIEVAL WORLD**

This course traces the expansive history from the classical world through the transition into the medieval world, focusing on the civilizations of Rome, the Germanic peoples of northern Europe, and the empires of India and China. This course will examine the founding of the Roman Republic and Rome's expansion as an empire across the Mediterranean world, the development of advanced empires in India and China, and the political, commercial, cultural, and religious innovations in and surrounding these civilizations. It will study the political, economic, social, and cultural development of the three successor civilizations of classical Rome—Byzantium, Islam, and Western Christendom, with particular emphasis on the last. The topics covered in this course include: the end of the ancient world, the rise of Christianity, the era of Germanic migrations, the Germanic West, the Catholic Church in the West, the Carolingian Empire, the 9th century invasions, feudalism and manorialism, the Byzantine Empire, the rise of Islam, the Crusades, the development of medieval kingdoms and nation-states, class structure in the Middle Ages, the Renaissance of the high Middle Ages, the Mongol invasions, and the beginnings of the Reformation.

#### **10TH GRADE**

*1.0 Credit; Honors Available*

### **WESTERN CIVILIZATION**

This course details the history of Europe from the Renaissance to the 21st century, including World War I and II, the Cold War, and the European Union. It will also assess the impact of these and other aspects of Europe's origin on today's world. This course is designed to equip students with the knowledge and tools necessary to understand the mechanics and functions of the free market. Key elements include the study of scarcity, supply and demand, market structures, the role of government, national income determination, money and the role of financial institutions, economic stabilization, trade and interdependence, and other economic systems. This course will prepare students to make informed choices in their respective roles as free market consumers, producers, employees, employers, borrowers, lenders, savers, and voters.

#### **11TH GRADE**

*1.0 Credit; Honors Available*

### **AMERICAN HISTORY & GOVERNMENT**

This course contextualizes American culture in Western civilization. This survey course begins with the Colonial period and the founding of our nation and extends through the present day. Throughout the course standards, there will be some overlap of time periods to allow for teacher flexibility to address the complexity of the issues and events. The focus of this course provides students with a framework for studying political, social, economic, and cultural issues, and for analyzing the impact these issues have had on American society. In addition, American History & Government provides an in-depth look at the United States Constitution and Bill of Rights. Students will further examine the historical beginnings of our governmental framework and analyze the intentions of our Founding Fathers including their understandings of freedom, liberty, equality, private property, and limited government.

#### **12TH GRADE**

*1.0 Credit; Honors Available*

## LITERATURE

### ANCIENT & CLASSICAL LITERATURE

This course focuses on primary sources from the ancient world, ranging from creation stories to Greco-Roman mythology and history, Norse mythology, Aesop's fables, and the Old and New Testaments. Students are introduced to Ancient Mesopotamia, Egypt, and Greece, and skills emphasized include reading comprehension, inference, and analytical thinking. As this course examines the strengths and weaknesses of great heroes long since past, it will provide students with the intellectual toolbox needed to resolve the great dilemmas they'll encounter in life.

**6TH GRADE**

### WESTERN LITERATURE

In this course, students engage with the literature from the medieval and Renaissance periods of Western civilization, aligning with course material from their Western Civilization history classes. Material studied includes primary sources as well as secondary sources by C.S. Lewis and Roger Lancelyn Green, who wrote adaptations of well-known medieval and Renaissance works from a 20th century perspective. In addition, this course covers two of Shakespeare's plays and Mark Twain's *Personal Recollections of Joan of Arc*.

**7TH GRADE**

### AMERICAN LITERATURE

This course focuses on 19th and 20th century American literature, including poetry, short stories, novels, biographies, and dramas. Readings cover a wide range of eras, genres, settings, and themes, and themes to allow for an understanding of the American "classic" and the unique contributions of American writers to the Western canon. Significant American social issues such as slavery, civil rights, and freedom of speech, as well as the intrepid, pioneering spirit of the individual are explored in this course.

**8TH GRADE**

### LITERATURE OF THE NEAR EAST & THE GREEK WORLD

This course examines the works of ancient literature of the Near East and the Greek world that captured such immortal events as the Trojan War and the Exodus, with a particular focus on the authors and the historical context of these great books. Works including the *Epic of Gilgamesh*, Homer's *Iliad*, and selections from the Hebrew Bible will be used to explore the themes, historical contexts, and styles of writing these ancient writers employed. In this course, students will develop the ability to read closely and analyze texts in order to trace the foundation of the Western tradition.

**9TH GRADE**

*1.0 Credit; Honors Available*

### LITERATURE OF ROME & THE MEDIEVAL WORLD

This course focuses on classical and medieval literature of the Western tradition, beginning with the Golden Age of Rome and ending with the poetry of the Renaissance. As students read through epic poems like Virgil's *Aeneid* or Dante's *Divine Comedy*, students will explore themes such as heroism, loyalty, sacrifice, forgiveness, piety, and love, enabling them to make sense of life's challenges and see the influence of poets and dramatists on the course of history.

**10TH GRADE**

*1.0 Credit; Honors Available*

**WESTERN LITERATURE**

This course begins with the plays of William Shakespeare and traces the development of the Western canon into the 20th century. The course will investigate the major movements of Western literature, such as Elizabethan drama, Romanticism, and the Modernist movement while noting the range of themes, characterizations, and literary genres of the Western canon.

**11TH GRADE**

*1.0 Credit; Honors Available*

**AMERICAN LITERATURE**

This course seeks to introduce students to exemplary works of great American authors, poets, thinkers, and essayists. Students will explore great works from unique American voices. Important questions will be addressed through close reading, analysis, discussion, Socratic questioning and seminar, research, and writing. American Literature captures the American spirit and personality. Voices from periods of American history ranging from the colonial period through the modern age will be examined in pursuit of defining the American dream and contextualizing its place in today's world. The course will equip students with important non-cognitive skills to operate independently, critically, and empathetically in an ever-changing American landscape.

**12TH GRADE**

*1.0 Credit; Honors Available*

## MATHEMATICS

**SAXON COURSE 1**

This course requires students to work primarily with numerical expressions, including decimals, order of operations, LCM, GCF, reciprocals, factors, fractions, exponents, and ratio problems. Later in the course, algebraic expressions, equations, and inequalities will be covered, along with aspects of geometry, including polygons, circles, area, and volume.

**6TH GRADE****SAXON COURSE 2**

Saxon Course 3/Pre-Algebra introduces students to topics such as exponents, probability, ratios and proportions, surface area and volume, multi-step equations, linear equations, sequences, inequalities, polynomials, and data analysis. Skills and concepts are built through critical thinking, helping students become more proficient and more confident problem solvers.

**6TH-7TH GRADE****SAXON COURSE 3/PRE-ALGEBRA**

Building on skills developed in Saxon Course 3/Pre-Algebra, Algebra I guides students in simplifying higher order roots, graphing linear equations and inequalities, and solving operations with polynomials. Additional topics of study include: systems of equations, a continuation of probability and data analysis, factoring methods, absolute value, equations and inequalities, rational expressions, quadratics, and radical equations. Ninth grade students will earn high school credits for this course. All students taking Algebra I will be required to take the final exam.

**6TH-8TH GRADE**

**ALGEBRA I**

This course covers the fundamentals of algebra and builds the algebraic foundation essential for solving increasingly complex problems. Higher-order thinking skills use real-world applications, reasoning and justification to make connections through verbal and numeric representations. High school credit will be given starting in ninth grade. All students taking the course will be required to take the final exam.

**7TH–9TH GRADE****GEOMETRY**

In Geometry, there is an increased focus on students' visualization and problem-solving skills in the application of geometric ideas. After a review of geometric formulas, students will move on to studying proofs, triangle congruence, quadrilaterals, arcs and sectors, constructions, and circles. Students will be introduced to trigonometric ratios, transformations, and symmetry as well. Instruction in this course integrates synthetic and coordinate approaches to geometry and reinforces and extends knowledge of algebra. Ninth grade students will earn high school credits for this course. All students taking Geometry will be required to take the final exam.

**8TH–10TH GRADE***1.0 Credit; Honors Available***ALGEBRA II**

This course provides a review and extension of the concepts taught in Algebra I. Topics covered will include operations with real numbers, systems of linear equations and inequalities, factoring, algebraic fractions and fractional equations, quadratic functions and some work with conic sections, exponential functions, complex numbers, and logarithms.

**9TH–11TH GRADE***1.0 Credit; Honors Available***PRE-CALCULUS**

This course continues to build upon a student's study of algebraic expressions, equations and inequalities. Pre-Calculus includes a study in linear, quadratic, and polynomial functions; rational functions; exponential modeling; logarithmic functions; trigonometric functions and their graphs; the Unit Circle; trigonometric identities; vectors; sequences and series; conics; and parametric and polar equations.

**10TH–12TH GRADE***1.0 Credit; Honors Available***AP CALCULUS AB**

This course explores the key concepts, methods, and applications of single-variable calculus including functions, graphs, limits, derivatives, integrals, and the Fundamental Theorem of Calculus. Students will become familiar with concepts, results, and problems expressed in multiple ways including graphically, numerically, analytically, and verbally. Technology will be used to help solve problems, experiment, interpret results, and support conclusions. Students will have the opportunity to earn AP credit for college at the completion of this course.

**11TH–12TH GRADE***1.0 Credit***AP CALCULUS BC**

This course details the key concepts, methods, and applications of single-variable calculus including all topics covered in AP Calculus AB (functions, graphs, limits, derivatives, integrals, and the Fundamental Theorem of Calculus) as well as additional topics in differential and integral calculus, such as parametric, polar and vector functions, and series. Students will become familiar with concepts, results, and problems expressed in multiple ways, including

**12TH GRADE***1.0 Credit*

graphically, numerically, analytically, and verbally. Technology will be used to help solve problems, experiment, interpret results, and support conclusions. Students will have the opportunity to earn AP credit for college at the completion of this course.

## STATISTICS

This course for seniors will introduce students to theoretical and practical applications of statistics. In the first section of the course, students will focus on establishing patterns in data as well as the different ways data models vary from the standard models. After the foundation is secured, students will begin conducting studies and use various methods of statistical analysis to interpret the data. Students will also use probability and simulation to describe real-world mathematical scenarios, and will explore the simulations using both calculators and other technologies. Finally, students will complete the course by establishing population parameters and using statistical modeling to test a hypothesis about a population. As students progress through the course, they will learn to identify bias in sampling and statistical analysis using current polling data.

### 11TH–12TH GRADE

*1.0 Credit; Honors Available*

# SCIENCE

## EARTH SCIENCE

This course develops an awareness of Earth's systems and humanity's interactions with those systems. Broad topics included in the course are the Earth in the Universe, Earth systems, structures, processes, and Earth history. Understanding the awareness of earth's systems and the human impact on those systems will be the main focus of this course. Emphasis will be placed on understanding the lithosphere, the hydrosphere, the atmosphere, and the biosphere. One of the main goals of this course is to provide the student with the means to understand the interrelatedness of Earth's systems. Students will make inquiries and analyze data through guided laboratory investigations. Traditional laboratory experiences provide opportunities to demonstrate how science is constant, historic, probabilistic, and replicable. Although there are no fixed steps that all scientists follow, scientific investigations usually involve the collection of relevant evidence, the use of logical reasoning, the application of imagination to devise hypotheses, and the development of explanations to make sense of collected evidence. Student engagement in scientific investigation provides the background for understanding the nature of scientific inquiry.

### 6TH GRADE

## LIFE SCIENCE

This course is an introductory level course designed to enable students to explore basic biological concepts. Broad topics included in this course are structures and functions of living organisms, genetics and inheritance, disease and living organisms, ecosystems and living organisms, food webs, and biotechnology. Students focus on concepts that are shared by all living things such as cell structure, biochemical make-up, and inheritance. In addition, students examine the diversity of life as they classify the many different species of living organisms into kingdoms and other classification categories. Students also develop an understanding of ecology that relates the interdependence of living with each other and with their environment. Students will make inquiries and analyze data through guided laboratory investigations. Traditional laboratory experiences provide opportunities to demonstrate how

### 7TH GRADE

science is constant, historic, probabilistic, and replicable. Although there are no fixed steps that all scientists follow, scientific investigations usually involve collections of relevant evidence, the use of logical reasoning, the application of imagination to devise hypotheses, and explanations to make sense of collected evidence. Student engagement in scientific investigation provides background for understanding the nature of scientific inquiry. In addition, the science process skills necessary for inquiry are acquired through active experience. The process skills support development of reasoning and problem-solving ability and are the core of scientific methodologies.

### PHYSICAL SCIENCE

This 8th Grade course will provide a rich knowledge base to provide a foundation for the continued study of science. Broad topics included in the course include forces and motions, matter: properties and change, and energy: conservation and transfer. The investigations are approached in a qualitative manner in keeping with the mathematical skills of the students. Traditional laboratory experiences provide opportunities to demonstrate how science is constant, historic, probabilistic, and replicable. Although there are no fixed steps that all scientists follow, scientific investigations usually involve collections of relevant evidence, the use of logical reasoning, the application of imagination to devise hypotheses, and the development of explanations to make sense of collected evidence. Student engagement in scientific investigation provides background for understanding the nature of scientific inquiry. In addition, the scientific process skills necessary for inquiry are acquired through active experience. These process skills support development of reasoning and problem-solving ability and are the core of scientific methodologies.

**8TH GRADE**

### EARTH SCIENCE

This course provides students a more in-depth understanding and awareness of the Earth's systems. Broad topics included in the course include the Earth in the Universe, Earth systems, structures, and processes, Earth history, hydrosphere, atmosphere, biosphere, climate patterns, and global and human resources. Emphasis will be placed on plate tectonics, rock and mineral formation, Earth's resources, Earth's origin, and cycles that circulate materials through Earth's systems. One of the main goals of this course is to provide the student with the means to understand the principles that govern the planet. The student will make inquiries and analyze data through laboratory investigations. Through the investigation of current events, students will obtain an awareness of environmental issues and how topics discussed in class are related to world events. Traditional laboratory experiences provide opportunities to demonstrate how science is constant, historic, probabilistic, and replicable. Although there are no fixed steps that all scientists follow, scientific investigations usually involve the collection of relevant evidence, the use of logical reasoning, the application of imagination to devise hypotheses, and the development of explanations to make sense of collected evidence. Student engagement in scientific investigation provides background for understanding the nature of scientific inquiry. In addition, the scientific process skills necessary for inquiry are acquired through active experience. These process skills support development of reasoning and problem-solving ability and are the core of scientific methodologies.

**9TH GRADE**

*1.0 Credit; Honors Available*

**BIOLOGY**

This course explores topics on cell biology, ecological relationships, genetics, evolution and adaptations, organismal classification systems, and biological molecules. Broad topics included in course include structures and functions of living organisms, genetics and inheritance, disease and living organisms, DNA technology, natural selection, classification of species, molecular biology, and biochemistry. This class is designed to give students an opportunity to participate in hands-on activities and labs that focus on enhancing learning of basic biological standards. Conceptual knowledge of the relationships between structure and function found in biology will be highlighted. Traditional laboratory experiences provide opportunities to demonstrate how science is constant, historic, probabilistic, and replicable. Although there are no fixed steps that all scientists follow, scientific investigations usually involve the collection of relevant evidence, the use of logical reasoning, the application of imagination to devise hypotheses, and the development of explanations to make sense of collected evidence. Student engagement in scientific investigation provides background for understanding the nature of scientific inquiry. In addition, the scientific process skills necessary for inquiry are acquired through active experience. These process skills support development of reasoning and problem-solving ability and are the core of scientific methodologies.

**10TH GRADE**

*1.0 Credit; Honors Available*

**CHEMISTRY**

This course introduces the study of the composition and properties of matter. Students will have additional problem-solving opportunities throughout the year. Laboratory experiments are incorporated throughout the curriculum to enhance and reinforce chemistry concepts, as well as to learn and develop laboratory skills. Broad topics covered include atomic structure, electron structure, bonding, chemical nomenclature, chemical quantities, chemical reactions, stoichiometry, gas laws, thermochemistry, electrochemistry, solutions, and nuclear chemistry. Traditional laboratory experiences provide opportunities to demonstrate how science is constant, historic, probabilistic, and replicable. Although there are no fixed steps that all scientists follow, scientific investigations usually involve collections of relevant evidence, the use of logical reasoning, the application of imagination to devise hypotheses, and the development of explanations to make sense of collected evidence. Student engagement in scientific investigation provides background for understanding the nature of scientific inquiry. In addition, the scientific process skills necessary for inquiry are acquired through active experience. These process skills support development of reasoning and problem-solving ability and are the core of scientific methodologies.

**11TH GRADE**

*1.0 Credit; Honors Available*

**PHYSICS**

This course explores the mathematical and motion-oriented study of matter and energy. It provides an understanding of the scientific method as well as the physical principles and laws that govern kinematics, mechanics, light, sound, waves, and electromagnetism. Students are provided with various laboratory experiences that are designed to enhance and reinforce the concepts and principles studied in physics. In the academic/standard course, more time is taken to explore the concepts and tie those in mathematically. Students are expected to have taken or currently be taking Algebra II while taking physics. Traditional laboratory experiences provide opportunities to demonstrate how science is constant, historic, probabilistic, and replicable. Although there are no fixed steps that all scientists follow, scientific investigations usually involve the collection of relevant evidence, the use of logical reasoning, the application of imagination to devise hypotheses, and the development of explanations to make sense of

**12TH GRADE**

*1.0 Credit*

collected evidence. Student engagement in scientific investigation provides background for understanding the nature of scientific inquiry. In addition, the scientific process skills necessary for inquiry are acquired through active experience. These process skills support development of reasoning and problem-solving ability and are the core of scientific methodologies.

### AP PHYSICS

AP Physics 1 is an algebra-based, introductory college-level physics course. Students cultivate their understanding of Physics through inquiry-based investigations as they explore topics such as Newtonian mechanics (including rotational motion); work, energy, and power; mechanical waves and sound; and introductory, simple circuits. At the completion of the course, students will take the AP Physics 1 exam for an opportunity to earn AP college credit.

**12TH GRADE**

1.0 Credit

## TRIVIUM

### GRAMMAR AND WRITING 6

Students will be introduced to the text, *Grammar and Writing 6*, which will ease the transition from their previous studies of *Shurley English* to the application of grammar concepts in their own writing. Many of the previously learned concepts will be expanded upon, and students will have the opportunity to further develop their understanding of English language conventions. In conjunction with their rigorous study of grammar, students will be introduced to sentence diagramming and the skill of using prefixes, roots, and suffixes to engage with challenging vocabulary. A preliminary study of the writing process will also begin in this course, preparing students for the rigors of middle school writing.

**6TH GRADE**

### GRAMMAR AND WRITING 7

This course transitions students into Hake's *Grammar and Writing 7*, which teaches parts of speech and syntactical elements through classification. Students will know definitions of and be able to identify all classification of words, from articles to participles. This course also guides students through other aspects of grammar, such as subject-verb agreement and proper conjugation of verbs. Students will develop the style and structure of their writing through frequent writing assignments.

**7TH GRADE**

### FORMAL LOGIC/INFORMAL FALLACIES

In this course, students will begin the study of formal logic. Formal logic looks at reasoning in the abstract. It focuses primarily on deductive reasoning, dealing with types of arguments in which the conclusion must be true if premises used to support it are true, ensuring that arguments are not only true but also valid. Formal logic studies how an argument is built (the form and structure of an argument), rather than what an argument is about (the content or substance of an argument). Additionally, students will study informal logic. Informal logic focuses on the content of the argument and avoiding logical fallacies. Students learn to identify such errors in their reasoning in a variety of real-world contexts and develop strategies so as to avoid them in their own arguments. Finally, this course teaches the content of argumentation and basic rhetorical strategies through the examination of both classic and modern-day examples.

**8TH GRADE**

**RESEARCH, WRITING, & RHETORIC**

This course sharpens students' written communication skills and knowledge of good research techniques across all core academic disciplines. Students review and practice the elements of effective writing for English, history, science and math courses; develop advanced vocabulary; and practice citation and documentation of source material in a variety of formats. This course places emphasis on how the audience, purpose, and organization of one's writing can vary from one genre to the next, and thus equips students with the skills they need to successfully navigate differing requirements in their high school and college careers. In addition, this course is designed to enrich effectiveness of verbal and nonverbal communication and overall public speaking abilities. Students will study speech communication as a process that includes speaking, listening, and perception by creating, delivering, and evaluating public speaking.

**9TH GRADE***1.0 Credit***SOCRATIC LOGIC**

This course teaches elements of logic using the Socratic Method, Platonic questions, and Aristotelian principles. It uses Socrates as the ideal teacher for the beginner and the Socratic Method as the ideal method of logical reasoning. This course presents a complete system of classical Aristotelian logic, the logic of ordinary language, and the logic of the four language arts: reading, writing, listening, and speaking.

**10TH GRADE***1.0 Credit***PHILOSOPHY & ETHICS**

This course places primary emphasis on the perennial problems in philosophy rather than on particular schools of thought. Students read selections from the Western tradition that help them to discover that philosophical questions, regardless of age, remain relevant in the 21st century. In addition, this course examines historical philosophers' views on ethics and the ethical systems they formulated in light of the contexts in which they wrote. Through this course, students understand history through the moral ideologies that have and continue to influence the actions of mankind.

**11TH GRADE***1.0 Credit***SENIOR SEMINAR**

This course is the capstone of the classical curriculum, combining all previous skills and knowledge to develop original conclusions through logical reasoning and analysis. Seniors study a particular course topic (varies year to year) in depth and generate an original 15–25 page thesis on a subject of their choice relating to the seminar content. Students receive one-on-one advising from a faculty member throughout the writing process. Following completion of the thesis, students must defend their work before a faculty panel. This course is rigorous but provides an excellent preparation for college level work. In addition, this course provides practical preparation for post-secondary education. Students receive personalized advising on researching and applying to colleges, writing personal statements, submitting financial aid forms, applying for scholarships and exploring careers and other post-secondary options. Students also strengthen and develop post-secondary life skills with units regarding campus life, post-secondary academic skills, college issues, and financial education. This course is a comprehensive course for all 12th Grade Thales Academy students and a passing grade is mandatory to meet graduation requirements.

**12TH GRADE***1.0 Credit*

## LATIN

### INTRODUCTION TO LATIN

This course introduces students to the classical Latin language and Roman civilization. Students will gain proficiency in language study as they master the rigors of Latin pronunciation, grammar, and translation. Students will learn and retain new vocabulary as they work to reinforce knowledge of previous concepts and skills, while gaining proficiency in the translation of Latin texts by applying new grammatical and syntactical concepts. They will also develop an appreciation for classical civilization, the contributions of Rome to world history and the present day, and its foundational role in Western civilization.

**6TH GRADE**

### LATIN 1A

This course continues to introduce students to the Latin classical language and Roman civilization. Students will gain proficiency in language study as they master the rigors of Latin pronunciation, grammar, and translation. Students will learn and retain new vocabulary as they work to reinforce knowledge of previous concepts and skills, while gaining proficiency in the translation of Latin texts by applying new grammatical and syntactical concepts. They will also develop an appreciation for classical civilization, the contributions of Rome to world history and the present day, and its foundational role in Western civilization.

**7TH GRADE**

### LATIN 1B

This course continues to introduce the Latin classical language and Roman civilization. Students will gain proficiency in language study as they master the rigors of Latin pronunciation, grammar, and translation. Students will learn and retain new vocabulary as they work to reinforce knowledge of previous concepts and skills, while gaining proficiency in the translation of Latin texts by applying new grammatical and syntactical concepts. They will also develop an appreciation for classical civilization, the contributions of Rome to world history and the present day, and its foundational role in Western civilization. During 3rd quarter, students will be responsible for translating material and will be required to take the National Latin Exam for their level.

**8TH GRADE**

### LATIN II

This course allows students to gain proficiency in language study as they master the rigors of Latin pronunciation, grammar, and translation. Students will learn and retain new vocabulary as they work to reinforce knowledge of previous concepts and skills, while gaining proficiency in the translation of Latin texts by applying new grammatical and syntactical concepts. They will also develop an appreciation for classical civilization, the contributions of Rome to world history and the present day, and its foundational role in Western civilization. More emphasis will be placed on reading the language as students read historical accounts of daily life as well as cultural themes and various lessons on the fall of the Roman Republic and the longevity of the Roman Empire. During the 3rd quarter, students will be required to take the National Latin Exam Level II.

**9TH GRADE**

*1.0 Credit; Honors Available*

**LATIN III**

This course further allows students to gain greater proficiency in language study as they master the rigors of Latin pronunciation, grammar, and translation. Students will learn and retain new vocabulary as they work to reinforce knowledge of previous concepts and skills, while gaining proficiency in the translation of Latin texts by applying new grammatical and syntactical concepts. They will also develop an appreciation for classical civilization, the contributions of Rome to world history and the present day, and its foundational role in Western civilization. During 3rd quarter, students will be required to take the National Latin Exam Level III.

**10TH GRADE**

*1.0 Credit; Honors Available*

**LATIN IV**

This course provides greater proficiency in language study as they master the rigors of Latin pronunciation, grammar, and translation. Students will learn and retain new vocabulary as they work to reinforce knowledge of previous concepts and skills, while gaining proficiency in the translation of Latin texts by applying new grammatical and syntactical concepts. Students will focus on the literature, especially poetry and historical texts while constantly reviewing basic Latin grammar. Authors will include Ovid, Horace, Catullus, Cicero and Caesar. During 3rd quarter, students will be required to take the National Latin Exam Level III/IV Poetry.

**11TH GRADE**

*1.0 Credit; Honors Available*

**LATIN V (HONORS)**

This course provides greater proficiency in language study as they master the rigors of Latin pronunciation, grammar, and translation. Students will work to reinforce knowledge of previous concepts and skills, while gaining proficiency in the translation of Latin texts by applying new grammatical and syntactical concepts. Students will focus on the literature, especially poetry and historical texts while constantly reviewing basic Latin grammar. Authors will include Virgil Legamus and Ceasar Legamus.

**12TH GRADE**

*1.0 Credit*

**AP LATIN**

This course focuses on the in-depth study of selections from two of the greatest works in Latin literature: Vergil's Aeneid and Caesar's Gallic War. The course requires students to translate the readings and places these texts in a meaningful context, which helps develop critical, historical, and literary sensitivities. Throughout the course, students consider themes in the context of ancient literature and bring these works to life through classroom discussions, debates, and presentations. Additional English readings from both of these works help place the Latin readings in a significant context. At the completion of the course, students have the opportunity to take the AP Latin exam to earn AP college credit.

**12TH GRADE**

*1.0 Credit*

## PE, HEALTH, & DIGITAL CITIZENSHIP

**PE, HEALTH, & DIGITAL CITIZENSHIP**

Students in 6th Grade receive Physical Education, Health, and Digital Citizenship instruction every week. PE focuses on a variety of activities to improve psychomotor (physical), cognitive (knowledge) and affective (personal/social behavior) abilities. Health encourages students to take responsibility for their mental, physical, and emotional well-being, and thereby promotes

**6TH GRADE**

the flourishing of the complete person. Digital Citizenship introduces students to the 24/7 social nature of digital media and technologies. Students gain basic technical vocabulary and knowledge, learn how to conduct effective and efficient online searches, learn strategies for guarding against identity theft and scams, and learn about the difference between being a passive bystander versus a brave up-stander in cyberbullying situations. Students are also introduced to copyright and fair use policies, and the rights they have as creators.

### **PE, HEALTH, & DIGITAL CITIZENSHIP**

Students in 7th Grade receive Physical Education, Health, and Digital Citizenship instruction every week. PE focuses on a variety of activities throughout the course to improve psychomotor (physical), cognitive (knowledge) and affective (personal/social behavior) abilities. Health encourages students to take responsibility for their mental, physical, and emotional well-being, and thereby promotes the flourishing of the complete person. In Digital Citizenship, students review their media habits and the array of media they use on a weekly basis, and reflect on their responsibilities as creators and consumers of creative work. While acknowledging the benefits of online communication and messaging, students learn how to handle situations or online behavior that may make them feel uncomfortable. Students learn that presenting themselves in different ways online carries both benefits and risks.

#### **7TH GRADE**

### **PE, HEALTH, & DIGITAL CITIZENSHIP**

Students in 8th Grade receive Physical Education, Health, and Digital Citizenship instruction every week. PE focuses on a variety of activities throughout the course to improve psychomotor (physical), cognitive (knowledge) and affective (personal/social behavior) abilities. Health encourages students to take responsibility for their mental, physical, and emotional well-being, and thereby promotes the flourishing of the complete person. In Digital Citizenship, students realize they have a digital footprint and that this information can be searched, copied and passed on, but that they can take some control based on what they post online. Students learn that anyone can publish on the Web, so not all sites are equally trustworthy. Students draw connections between young teens' perceptions of digital drama and stereotypes of men and women on reality TV, and distinguish good-natured teasing from cyberbullying. Students expand their understanding of fair use, apply it to case studies, and create an original work of fair use.

#### **8TH GRADE**

### **PE & HEALTH**

This course encourages students to take responsibility for their mental, physical, and emotional well-being, and thereby promote the flourishing of the complete person. Students use contemporary textbooks to study nutrition, personal responsibility, and physical fitness, alongside original source texts from ancient, medieval, and modern eras on issues relating to these topics. Students are encouraged to think philosophically on a wide range of issues and utilize concepts learned in the classroom to analyze challenges they face outside of school. In addition, students will complete a variety of activities throughout the course to improve their psychomotor (physical), cognitive (knowledge) and affective (personal/social behavior) abilities.

#### **9TH GRADE**

## SPANISH

### SPANISH I

This elective course is intended for students who did not satisfactorily complete Spanish 1A and Spanish 1B. This course introduces the study of the Spanish language and culture of the Spanish-speaking world. This course strives to help the learner acquire knowledge by integrating the four basic skills of reading, writing, listening, and speaking. By the end of this course, students will have acquired skills in basic communication, vocabulary, and grammar, and will have a beginning knowledge of Hispanic culture. Instruction will gradually change from English to Spanish and by midyear students will be expected to understand basic Spanish instructions for assignments and classroom tasks. This is a year-long course.

#### 9TH GRADE

*1.0 Credit; Honors Available*

### SPANISH II

This elective course helps the student gain an understanding of the Spanish language by integrating the four basic skills of reading, writing, listening, and speaking. The use and immersion of Spanish in the classroom will be the primary goal. An effort to use the language at all times is expected. By the end of this course, students will have solidified their understanding of Spanish I key vocabulary and sentence structures necessary for limited personal communication, as well as learned how to communicate in past, future, and perfect tenses. This is a year-long course.

#### 9TH OR 10TH GRADE

*1.0 Credit; Honors Available*

### SPANISH III

This elective course continues the study of the spoken and written language. This fast-paced course includes advanced grammar structures, vocabulary, and extensive listening, speaking, reading, writing, and culture activities. Instruction and assessment are almost entirely in Spanish and students are expected to communicate in Spanish. This is a year-long course.

#### 10TH OR 11TH GRADE

*1.0 Credit; Honors Available*

### SPANISH IV

This elective course further continues the study of spoken and written language while expanding cultural and literary knowledge of the Spanish language. This fast-paced course includes advanced grammar reviews while learning the basics of literary analysis in Spanish. There are also extensive listening, speaking, reading, writing and cultural activities. Instruction and assessment are almost entirely in Spanish and students are expected to communicate in Spanish. This is a year-long course.

#### 11TH OR 12TH GRADE

*1.0 Credit; Honors Available*

### AP SPANISH LITERATURE

This course details a study of spoken and written language in Spanish and builds on the literary analysis skills learned in Spanish IV while expanding vocabulary and reading a variety of texts in Spanish. Students will be required to communicate, write extensively, and read a large body of texts in Spanish. Multiple AP practice assessments will be given throughout the year. Instruction and assessment are entirely in Spanish. This is a year-long course. Following the completion of the course, students have the opportunity to take the AP Spanish Literature exam to earn AP college credit.

#### 12TH GRADE

*1.0 Credit*

## LUDDY INSTITUTE OF TECHNOLOGY

### EXPLORATORY STEM

This elective course gives students an opportunity to experience how concepts and skills in Science, Technology, Engineering, and Mathematics (STEM) can be used to solve problems in real world situations. It also provides students an opportunity to explore various STEM careers and educational options in secondary and post-secondary academic paths.

**6TH–8TH GRADE**

### FUNDAMENTALS OF ENGINEERING DESIGN

This elective course explores and applies the skills, concepts, and fundamental principles of engineering. Students learn the basics of various technological systems and engineering processes in engineering career fields. Instructors reinforce the value of an engineering notebook to document and capture ideas. The design process is introduced to solve problems and understand the influence of creative and innovative design on daily life. Students learn traditional drafting techniques as well as the industry-standard CAD software package, SolidWorks, and how to create images of their designs and how to produce a portfolio to showcase their creative solutions.

**9TH GRADE**

*1.0 Credit*

### PRINCIPLES OF ENGINEERING

This elective course explores various technological systems and engineering processes and exposes students to major concepts typically covered in a post-secondary engineering course of study. Topics include mechanisms, energy, statics, materials, and kinematics. Students develop problem-solving skills and apply their knowledge of research and design to create solutions to various challenges, document their work, and communicate solutions.

**10TH GRADE**

*1.0 Credit*

### ENGINEERING APPLICATIONS

This elective course details various technological systems and engineering processes in related career fields by studying various questions: How are things made? What processes go into creating products? Is the process for making a water bottle the same as it is for a musical instrument? How do assembly lines work? How has automation changed the face of manufacturing? While students discover the answers to these questions, they learn about the history of manufacturing, robotics and automation, manufacturing processes, computer modeling, manufacturing equipment, and flexible manufacturing systems. Students utilize CAD (SolidWorks) and physical and virtual modeling concepts to construct, test, collect, and report data.

**11TH GRADE**

*1.0 Credit*

### ENGINEERING DESIGN PROJECT

Students must complete Fundamentals of Engineering: Design prior to enrolling in this elective course. This course provides students practical application to practice the concepts covered over all four years of the program. This class prepares students for engineering undergraduate programs at the university level. Students will develop and complete a year-long project involving design, fabrication, and testing of a device or machine encompassing all skills and knowledge that they have learned in order to meaningfully impact the world around them.

**12TH GRADE**

*1.0 Credit*

## GENERAL ELECTIVES

*Elective offerings vary by campus and are dependent upon faculty availability, scheduling, and enrollment.*

### PERFORMING ARTS

This course develops and enhances skills necessary to produce successful vocal music and dramatic performances as individuals and ensembles. Musically, this course focuses on proper vocal technique through rehearsal and performance of a diverse repertoire. Theatrically, this course focuses on acquiring acting techniques and strategies, and provides exposure to a variety of dramatic exercises. Community performances are held throughout the term, and the semester culminates with a concert and play. There is no prerequisite for this class.

**6TH–12TH GRADE**

### BAND

This elective course is open to all interested students. The degrees of difficulty for each grade level will vary according to the abilities of each class as a whole. During the year-long elective, emphasis is placed on providing a strong fundamental approach to each student's instrument. Fundamentals stressed include proper posture and playing position, development of characteristic tone quality, and training in music literacy. Concert performances are mandatory. There is no prerequisite for this class.

**6TH GRADE**

### ADVANCED BAND

This course is open to all 8th–12th Grade students who have successfully completed Band or two years of band or private lessons elsewhere. This year-long elective introduces "comprehensive musicianship" through musical performance of challenging and varied literature with skills and concepts from the previous year being developed and expanded upon. In addition to continued refinement of individual performance skills, greater emphasis is placed on ensemble performance skills. Students continue to develop their knowledge of music theory, begin to analyze and evaluate music, use critical thinking skills to make refinements in their performance, and improve ensemble performance skills through musical expression and technical accuracy. Concert performances are mandatory.

**7TH–12TH GRADE**

### CHORUS

This elective course is open to all interested students. The degrees of difficulty for each grade level will vary according to the abilities of each class as a whole. Students learn, memorize, and perform a variety of choral styles appropriate to the grade level and developmental ability. Skills covered include simple to complex rhythmic, melodic, and harmonic patterns through sight-singing and performance literature; application of musical elements and theory to all choral literature; creation of a positive learning environment by working as a group towards a common goal; and basic vocal/choral skills such as appropriate singing posture, vowel and consonant placements, diction, breath support, choral tone, and resonance. There is no prerequisite for this class.

**6TH–12TH GRADE**

**ART**

This elective course is open to all interested students. The degrees of difficulty for each grade level will vary according to the abilities of each class as a whole. This course focuses on a variety of art media to build a strong foundation and understanding of art elements, principles of design, art history, and art theory. Lessons focus on engaging a student's imagination, enhancing critical thinking skills, and developing technical and perceptual skills. Students are introduced to artists and art movements from history with follow-up assignments that provide the opportunity to interpret style and themes using their own imagery. There is no prerequisite for this class.

**6TH–12TH GRADE****PERSONAL FITNESS**

This course teaches basic concepts of fitness and methods of implementation to develop a personal fitness plan. Specifically, students implement fitness concepts and principles to improve cardiorespiratory endurance, muscular strength and endurance, flexibility, and body composition. Students are required to dress out for this course. There is no prerequisite for this class.

**6TH–12TH GRADE****CURRICULUM ASSISTANCE**

This course is designed to meet the needs of students who seek a quiet environment to individually complete homework assignments. This is helpful for students who devote large amounts of time to after-school activities or for those who are acclimating to Thales Academy's rigorous course loads. Students are expected to arrive to class with individual work to complete; Curriculum Assistance is not a place for group or partner collaboration.

**6TH–8TH GRADE****ECONOMICS IN ACTION**

This semester-long course introduces students to the body of thought known as free market economics. Students learn that economics is the study of human action. Economic laws and theory ranging from scarcity, choice, and supply and demand to monetary theory and understanding the cause of economic booms and busts can all be derived from human action. A solid understanding of economics empowers students to understand the nature and causes of current issues and events that affect the world daily.

**9TH–10TH GRADE****ENTREPRENEURSHIP**

This semester-long course introduces students to the rewards and risks of entrepreneurship. Emphasis is placed on the mastery of skills needed to plan, organize, manage, and finance a small business. Skills in communication, technical writing, mathematics, research, and problem-solving are reinforced as each student prepares his/her own entrepreneurial plan.

**10TH–12TH GRADE****THEMES IN YOUNG ADULT LITERATURE**

This course focuses on the genre of Young Adult Literature from the 1960s–present day. Students will explore novels, drama, short stories, and poetry that have been written specifically for a young audience. Students will be able to participate in literature circles, write analyses of written works, create projects and engage in class discussions about their readings. Students will study the Top 15 Outcomes as well other themes through a wide variety of diverse and appealing literature.

**6TH-8TH GRADE**

**FORENSICS**

Forensics is the application of science (chemistry, physics, and biology) to the criminal and civil laws that are enforced by police agencies in a criminal justice system. It includes the investigation of fingerprinting, fiber analysis, ballistics, arson, trace evidence analysis, poisons, drugs, blood spatters, and blood samples. Students are taught the proper collection, preservation, and laboratory analysis of various samples.

**9TH-10TH GRADE****AP BLENDED LEARNING**

AP courses provide students with an opportunity to study a subject in greater depth and provide insight into college coursework while building the skills students need for the college classroom. Students may elect to take AP courses online individually through school-selected third party providers during normal school day hours. Following the completion of the course, students may opt to take the AP exam for a chance to qualify for AP college credit.

**10TH-12TH GRADE****INDIVIDUALIZED BLENDING LEARNING**

This course is a formal education program in which students may take a variety of courses online through a school-selected third party provider during the regular school day. This program allows students to access a wider variety of coursework than typically offered through the standard Thales Academy curriculum.

**9TH-12TH GRADE****AP PSYCHOLOGY**

This course engages students in the understanding and articulation of psychology as a science. Students are introduced to psychology, with a focus on the scientific study of human development, learning, motivation, and personality. It emphasizes the empirical examination of behavior and mental processes and infuses perspectives fostering students' growth, development, and understanding of cultural diversity. Students of psychology acquire information from a variety of sources, use information as they make decisions and evaluations, and solve problems. The study of psychology enables students to recognize and cope with uncertainty and ambiguity in human behavior.

**10TH-12TH GRADE****SPEECH & DEBATE**

This course will teach students the fundamentals of debate and give them the opportunity to hone their skills by participating in formal in-class debates on issues related to public policy and Constitutional principles. In the course, students will learn how to research, construct, analyze, evaluate, present, and defend both sides of an issue. The course will focus on both rhetorical training and content instruction, thereby enhancing students' public speaking, research, critical thinking, time management, and argument preparation abilities. Potential debate topics include: taxation, the federal budget, property rights, immigration, free trade, the carbon tax, education vouchers, and inflation.

**9TH-12TH GRADE****SHAKESPEARE IN WESTERN TRADITION**

This course will task students with the in-depth and meaningful study of the world and works of William Shakespeare. Students will read selections from Shakespeare's sonnets, comedies, histories, and tragedies. In addition to reading the works of Shakespeare, students will also study the history of Elizabethan England, the Globe Theater, and Shakespeare's own

**9TH-12TH GRADE**

life to gain a stronger contextual understanding for the politics, religious upheaval, values, and cultures of this influential period and its enigmatic, foremost playwright. Students will watch exemplary live and film performances of the works they have read. Students will regularly engage in Socratic discussion about the works they are reading. Students will regularly engage in dramatic performance based exercises to gain a better understanding of both Shakespearean language as well as character motivations. Students may also be tasked to produce original content in iambic pentameter and blank verse. Students will have the opportunity to transpose Shakespearean works into modern American Standard English and alternative settings. The course will culminate in a class performance of a selected Shakespearean work.

### **FEMALE VOICES OF WESTERN LITERATURE**

This course will allow students to study great female authors and impactful historical figures. Works by individuals such as Emily Dickinson, Flannery O'Connor, Kate Chopin, Sylvia Plath, Maya Angelou, Zora Neale Hurston, Ursula K. Leguin, Jane Austen, Louisa May Alcott, Joyce Carol Oates will be read. Women in the fields of science, medicine, math, politics, and civil rights will be discussed.

**9TH–12TH GRADE**

### **ECONOMICS II: MARKETING**

This year-long elective course introduces students to the field of marketing. Students begin the course by learning about the principles drawn from ancient rhetoricians on the art of persuasion. With this foundation established, students will then explore the essence of marketing and exchange relationships between businesses and consumers. Emphasis will be placed on marketing strategies, research, and advertising techniques. Lastly, students will explore the ethics of marketing and how this field affects individuals and society as a whole. A solid understanding of marketing empowers students to recognize activities that occur around them on a daily basis and use this knowledge to make more educated decisions in their life and career. Prerequisites: Economics & Entrepreneurship

**11TH–12TH GRADE**

### **RELIGIOUS FOUNDATIONS OF CIVILIZATION**

This course provides an academic and historical understanding of the major religions of the world that influence the 21st century. This survey course details the origins of religious movements, as well as the impact of religious traditions on world events. Essential beliefs and practices of Judaism, Buddhism, Islam, Christianity, and Hinduism are detailed for historical and cultural understanding with the essential outcome being an informed understanding of different worldviews.

**9TH–12TH GRADE**

### **LEARN TO LEAD (L2L)**

The Learn to Lead program (L2L) is a sequence of professional leadership coursework for the high school students. The L2L curriculum covers a wide range of professional and real-world content, beginning with the fundamental building blocks of leadership such as communication, public speaking and professionalism, and moving towards instilling virtuous behavior while exposing students to technical, practical skills such as economic concepts, personal finance and the stock market. Students are welcome to enter L2L at any time during their

**9TH–12TH GRADE**

high school careers. L2L develops forward-thinking, continuous learners that are hungry for knowledge and driven to combat complacency, while instilling a strong sense of virtue and character in these future leaders..

### **COLLEGE PREPAREDNESS**

This course allows students to determine interests and personality traits to make more informed educational and career choices. Throughout this class, the instructor advises students and parents on high school programs and academic curricula in preparation for college applications and admissions. Students work extensively on college admissions test (SAT/ACT) preparation, learning about the test format, directions and scoring, and test-taking strategies for success.

**10TH GRADE**

### **FLEX: COLLEGE ADMISSIONS 101**

This course allows students to prepare for the college application process. Students navigate college admissions resources, research college programs, and develop application essays. This course serves as a critical resource during the college application process

**11TH GRADE**