

# the Ecology Learning Center

## Course Catalog

### English

#### ENG 01 The Self in Place

In this course, students explore the idea of *place*, and what it means to belong to or be “native” to a place. Students will consider how their own identity reflects their place in the world by looking inward at themselves, at their families, their communities, and their world. By considering the full range of perspectives, students will hone their own perspectives and define their own visions of their place in the world.

#### ENG 02 Voices of Humanity

Through the exploration of literature, poetry, music and art, students will expand their ability to see how humanity uses its voice to tell important and compelling stories. This course will emphasize reading and writing to develop each student's unique voice and storytelling ability, as well as the enduring themes of identity and culture.

#### ENG 03 World Literature

In World Literature, students interact with literary traditions and voices from outside of the standard American English curriculum and outside of the traditional “Western canon.” Students explore traditions of myth-making and storytelling through works of short fiction, creative nonfiction, film, and novels. In this course we use the written and spoken word as a medium for exploring diverse global perspectives - cultural, religious, ecological - on universal themes.

#### ENG 04 Walkabout

A senior level English course in which students use autobiographical writing as a starting point for developing their own critical voice as an individual. Students will practice a mix of creative and practical writing techniques and styles. Particular emphasis will be placed on essential writing tasks such as resume writing, college applications, memoir writing, and personal philosophy. Students build skills in writing and communication which will support their future endeavors, including post-secondary education, job readiness, travel, and citizenship.

ENG 04.5 Walkabout [dual enrollment with **ADD UNIVERSITY + COURSE NAME**]

#### ENG 05 Common Literature

In this supportive and interactive English course, students will explore their unique voices and perspectives through creative writing, literature, and self-expression. Emphasis is placed on building confidence, self-awareness, and effective communication skills. This course focuses on project-based learning with flexible pacing. Differentiated instruction is utilized to meet diverse learning needs.

## **Science**

### SCI 01 Earth and Climate Sciences

This course combines elements of Earth Sciences and Environmental Sciences courses, with an emphasis on climate. Together, we will explore how earth systems impact food production, how humans impact climate and how climate impacts where and how we live, and our reliance on water as a natural resource. Throughout, we will look at these issues on a global and a local scale, hoping to apply some of the lessons to our own backyard. Students will engage in scientific inquiry, and strengthen their ability to approach the world like a scientist, developing skills in observation, forming questions, and interpreting data.

### SCI 02 Lab Biology

Students will have the opportunity to explore and deepen their understanding of life science disciplines. Throughout the year, we will explore elements of Biology, Ecology, Botany, and Environmental Science as they relate to our trimester themes of Food, Shelter, and Water. Our course will involve weekly classroom sessions, interdisciplinary projects and applications, as well as field work in our community.

### SCI 03 Lab Chemistry

This course is designed to give students an understanding of the fundamental concepts of chemistry. The curriculum for Chemistry is designed to give both college-bound and career-bound students foundations in fundamental problem-solving, pattern recognition, applied mathematics, and independent thinking. The curriculum is also designed to give college-bound students a general background in chemical concepts and calculations. Topics that may be presented include scientific measurement, atomic structure, periodic trends, chemical bonding, chemical reactions, stoichiometry, kinetic molecular theory & gasses, mixtures, acids and bases, lab safety and lab techniques. You will get the most out of this class if you consider how the things we study relate to your community (place-based) and to you personally.

### SCI 04 Environmental Science [dual enrollment with UMF ENV 111]

This course introduces environmental science as an interdisciplinary and applied scientific area of study. Specific topics that we explore include ecological principles, population dynamics, biodiversity, soil science, agricultural practices, marine fisheries, climate change, atmospheric pollution, energy sources and conservation, waste management, water

resources, and water pollution. In addition to the natural and physical science aspects of these topics, we will explore the role of humans in the natural world.

### SCI 05 Physics [dual enrollment with UMF PHY 110N]

This course is designed to give students an understanding of the fundamental concepts of physics. The curriculum for physics is designed to give both college-bound and career-bound students foundations in measurement & data analysis, fundamental problem-solving, applied mathematics, and independent thinking. The curriculum is also designed to give college-bound students a background in the study of general physics. Topics that may be presented include units & measurement, kinematics, forces & motion, energy, electricity & magnetism, thermodynamics, and waves. You will get the most out of this class if you consider how the things we study relate to you and your community (place-based). Algebra I is a prerequisite for this course.

### SCI 06 Physical Science

This course is designed to give students an understanding of fundamental concepts of physical science. The curriculum for this course is designed to give students foundations in fundamental problem solving, logical reasoning, and independent thinking. Whenever possible, topics will be related to machines, engines and modern life. Topics that may be presented include, but are not limited to, astronomy, thermodynamics, force and motion, energy and electricity, magnetism, weather and climate change.

## **Math**

### MA 01 Pre-Algebra

This course is all about growing your confidence in working with numbers, improving your skills with numbers, and becoming comfortable with quantitative thinking. The course will also introduce and help prepare you for further courses, such as algebra and geometry. We will explore topics such as integers, fractions, ratios, percents, and graphing functions. It will introduce equations, areas and volumes, and statistics. Through practice problems, class projects, and games, we will connect with the trimester themes of food systems, shelter, and water, as well as just have a little bit of fun with numbers!

### MA 02 Algebra 1

Students will have the opportunity to practice and deepen their quantitative literacy skills daily. Over the year, we will explore topics such as: simplifying and performing operations with polynomials, graphing polynomial functions, simplifying radical expressions, factoring, solving quadratic equations algebraically and by graphing. Interdisciplinary projects and applications will be integrated throughout the curriculum that focus on our trimester themes of Food, Shelter, and Water.

## MA 03 Geometry

This course is designed to give students an understanding of the fundamental concepts of geometry. The curriculum for geometry is designed to give both college-bound and career-bound students foundations in fundamental problem-solving, pattern recognition, spatial recognition and manipulation, applied mathematics, logical reasoning and independent thinking. The curriculum is also designed to give college-bound students a general background in geometric concepts, calculations, and reasoning.. Topics that may be presented include transformations and symmetry; congruence, construction and proof; geometric figures; similarity and right triangle trigonometry; circles; and geometric connections to algebra. You will get the most out of this class if you consider how the things we study relate to your community (place-based) and to you personally. Approach the class with a diligent work ethic and an open mind and you will succeed. Don't panic! If you do your homework, focus in class, and study, you should have no problems with geometry. It's fun!

## MA 04 Algebra 2

Students will have the opportunity to practice and deepen their quantitative literacy skills daily. Over the year, we will explore topics such as: solving systems of equations, rational functions, exponential and logarithmic functions, trigonometry, statistical thinking, and algebraic modeling. Interdisciplinary projects and applications will be integrated throughout the curriculum that focus on our trimester themes of Food, Shelter, and Water.

## MA 05 Precalculus

In this course, students continue building upon their algebra skills and begin their study of trigonometry. Further topics include work with polynomial and rational functions, exponential and logarithmic functions, trigonometric functions and the introduction of vectors, matrices, and modeling concepts. The course is designed to develop an understanding of the topics from algebra and trigonometry essential for success in the study of calculus.

## MA 06 Calculus [dual-enrollment course with UMF MAT 141]

Calculus is the mathematics of change. This course strengthens students' understanding of functions in preparation for the process of differentiation and integration. Calculus concepts explored include limits and continuity, derivatives, definite integrals, exponential and logarithmic functions, trigonometric functions, and techniques of integration. Emphasis is placed on the exploration of real-world calculus applications through environmental data and modeling.. Students are expected to use their mathematical knowledge and practices to solve problems. Graphing calculators are required.

## MA 07 Statistics [dual-enrollment course with UMF MAT 120]

This course deals with various introductory topics from probability and statistics, with emphasis on the interpretation of experimental data. Students will learn to calculate descriptive statistics, interpret probability distributions, and run inferential statistics (tests of

hypotheses). In addition, students will actually run statistical analysis using technology tools, such as the *TI-83/84* calculator and Microsoft *Excel*. Students will conclude the year designing a research project, collecting data in the field, analyzing results, and composing a research report.

## MA 08 Essential Math

This course is designed to give students an understanding of fundamental concepts of mathematics. The curriculum for Essential Math is designed to give students foundations in fundamental problem solving, logical reasoning and independent thinking. Topics that may be presented include whole numbers, fractions, percentages, decimals, exponents, basic financial literacy, linear equations and operations with algebraic expressions.

## Social Studies

### SS 01 US History

In this class, we will take a look at the history of the United States - starting long before the names 'United States' or even 'America' came into existence. We will begin our study of history by researching how the continent was populated by its earliest inhabitants, and work up to the 20th century. In our exploration of history, students will learn to see how conflict and cooperation, activism and manipulation have been central to the development and history of what is now the United States. We will touch on some of the most defining events, movements and wars in American history, up to and including the modern era. Our class will deepen our ability to recognize history as dynamic and integral to our own lives through incorporating current events across the school year.

### SS 02 Civics

In this course, we will actively seek to understand how our government functions, what the relationship is between citizens and government, and how each impacts social, cultural, economic and ecological factors. Students will analyze the powers and responsibilities of government at different levels and the relationships between levels of government. We will also look at how our government impacts citizens and the world at large. We will also seek to become active and a positive force in our community. To accomplish this, we will take on a service project, working to improve either our school, town or region

### SS 03 World Cultures [dual-enrollment course with UMF INS 100]

World Cultures examines the social, political, and economic forces of the past 500 years that have helped create the world as we know it today. In this period, the world has seen the

global rise, and subsequent fall, of the great European empires, a bi-polar world in which the US and USSR dominated the world as co-equal superpowers, and the rise of China as a challenger to American hegemony. Through this time period, the lives of people all over the world have become increasingly intertwined (sometimes willingly, sometimes not). Throughout this course students will study the world as it was, examine the world as it is, and make predictions about the world that is still to come.

#### SS 04 Maine Cultural History

Accompanying Maine Natural History, Maine Cultural History will explore the histories of indigeneity, colonization, immigration, and natural resource use that play a central role in how our state was shaped. This course will explore at length Maine's first people, using the framing of Wabanaki history to study pre-contact to present day. At the core of this exploration is the belief that Wabanaki history and culture is a current event, not a thing of the past. It will also track the past and present history of "New Mainers" and generations of immigrants along international and state trends, contextualizing migrations with industrial trends and geographic specificity. The emphasis of this class and Maine Cultural History is to expose students to interdisciplinary concepts and demonstrate the intersectionality of the state we call home. Students are asked to enroll in both Maine Natural History and Maine Cultural History.

#### SS 05 Sociology

To put it shortly, Sociology is the discipline of taking our social world - everywhere that humans interact with other humans - and *making the familiar seem strange*. In this class students will learn to investigate crucial social concepts such as: race, class, culture, religion, power, authority, status, socialization, urbanization, gentrification - and to study the impact of these forces on our daily life. Students are introduced to a range of research methods which are used to conduct social science, and learn to analyze the strengths & weaknesses of each approach.

#### SS 06 Maine Natural History

As an accompanying class to Maine Cultural History, Maine Natural History focuses on the study of natural science within the context of the state of Maine. The course follows and supports the progression of Maine Cultural History through studying scientific concepts. Students explore: dendrology, watersheds and watershed issues, native and invasive animal species, concepts of archeology and anthropology, issues related to race, and more. The emphasis of this class and Maine Cultural History is to expose students to interdisciplinary concepts and demonstrate the intersectionality of the state we call home. Students are asked to enroll in both Maine Natural History and Maine Cultural History.

# Foreign Language

## WL 01 Spanish 1

¡Bienvenidos a Español! This year we will explore Introducciones, verbos, vocabulario y conversaciòn as they relate to our trimester themes of Food, Shelter, and Water. Our course will involve weekly classroom sessions, conversation practice, and opportunities to explore Hispanic culture. Credit in this course will contribute to your Graduation Requirements in World Language.

## WL 02 Spanish 2

In Spanish II, students will expand skills and vocabulary learned in Spanish I. Students will explore the Spanish language as well as the different cultures of Spanish-speaking countries around the world in relation to *Food, Shelter, and Water*. Students will build an appreciation for culture, language, and community by dissecting their significance around the world and within their own communities.

## WL 03 Spanish 3

In Spanish III, students will expand skills and vocabulary learned in Spanish II. Students will more deeply explore the Spanish language and cultures around the world in relation to *Food, Shelter, and Water*. Students will more deeply explore the identity of the Spanish language alongside their own, utilizing expression of more complex ideas in this foreign language.

## WL 04 Spanish 4

In Spanish IV, students will converse and be instructed solely in Spanish. This immersive class environment will facilitate students' fully pushing themselves into foreign expression. Presentations and essays, alongside facilitated discussion will prepare students for foreign exchange and/or placing into advanced college courses.

## WL 05 French 1

This year we will explore introductions, essential verbs and vocabulary as students begin their expression of themselves in a new language. Our trimester themes of Food, Shelter, and Water will be incorporated into instruction as students gain appreciation for a new culture.

## WL 06 French 2-4

The second year of French instruction pushes students to expand their vocabulary alongside their understanding of French culture. Comparisons of French traditions around Food, Shelter, and Water will allow students to explore the world through this new language.

## Arts

### AR 01 Woodworking

Through this course in woodworking students will develop and refine some lifelong skills. They will be introduced to the art and science of woodworking through any year they choose to take this course. Focusing on hand tools usage, tool maintenance and repair students will build some of their own tools along the way. Projects will cover an introduction to basic joints and joinery construction and range based on ability and interest of students. Some projects have included everything from simple figure carving, to the construction of picnic tables and benches..

### AR 02 Visual Arts

Students will be introduced to sketchbooking/visual journaling, drawing, painting, collage/mixed media, press-free printmaking, paper-sculpture, assemblage, fiber arts, public/interactive art, environmental art and installation with an emphasis on traditional, *non-digital* tools and processes. The course provides a contemporary art and/or local/Maine community art context whenever possible. Aligned with *Three Years to Green Art*, a complimentary goal of the course is to inspire conversation about the function and intention of art, and to help all of us articulate intention in our work, including articulating the future life of our artworks - where they will land and live as functional and art for art's sake objects, or as ephemeral art or art explorations in a material that ultimately is reused/repurposed or safely disposed of, destroyed, or intentionally and sustainably left to natural processes of transformation, growth and decay.

### AR 03 Folk Music

Those with or without musical experience are welcome to join our Music program. Our instructor will incorporate many varied instruments, focused on those historically foundational to the folk tradition. Music theory, history, and politics are regularly incorporated into instruction, as this course works to open students' minds and experiences toward the beauty of expression they and others are capable of.

### AR 04 Theater/Film

Act with us! Students will be pushed out of their comfort zones with improv challenges, short performances, writing and directing their own pieces, as well as performing for the school and wider community. In addition students will study acting through film critique.

### AR 05 Ceramics

Over the course of the year students will engage in different forms of working with clay. Starting out with digging for local clay, and working with local potters around the Waldo county area. The trimester will start with hand building techniques, and move onto



sculpture, and throwing on the wheel. The class will introduce how to use the kiln, glazes, and different forms of firing their ceramic works of art. Students will have the opportunity to volunteer their time, and work, to the empty bowl program, which helps provide money, and food for those experiencing food insecurity. .

## **Career Readiness**

### CR 01 - Freshman Year Career Readiness

Students focus on developing professional skills through an ELC seminar where they learn about community agreements, school norms, and what it means to be part of a team. Students practice their professionalism through community engagement placement sites.

### CR 02 - Sophomore Year Career Readiness

Students deepen their understanding of careers through various classes where they research and explore professional degrees and pathways and continue to put their professionalism into practice through community engagement where they support the work of local businesses.

### CR 03 - Junior Year Career Readiness

Students take a financial literacy class and participate in a senior prep class where they map out post-high school plans, including exploring college options, financial aid, and standardized testing requirements. Students continue to support our local community and volunteer in professional settings through community engagement.

### CR 04 - Senior Year Career Readiness

Students prepare to transition out of high school in a college and career readiness course where they apply to colleges, revise their resumes, and fill out FAFSA. Students take an additional financial literacy class where they learn about budgeting, loans, investments, and banking options. Students senior year culminates in an internship with a local business where they get to explore personalized career options and hone their professional skills.

## **Wellness**

### WEL 01 - Freshman Year Wellness

Students explore holistic wellness by learning about wilderness skills, health and human anatomy, exercise science, and psychology. Additionally students participate in monthly all

school adventure days where they explore local hikes, learn how to mountain bike or rock climb, and practice cross country skiing skills.

#### WEL 02 - Sophomore Year Wellness

Students deepen their understanding of wellness by diving back into wilderness skills, health and human anatomy, exercise science, and psychology for a second year. Students continue to participate in monthly all school adventure days where they explore local hikes, learn how to mountain bike or rock climb, and practice cross country skiing skills.

#### WEL 03 - Junior Year Wellness

Students add to their breath of wellness knowledge by taking a nutrition and a sex education course their junior year. Students continue to participate in all school adventure days and go on a four day, three night junior/senior expedition trip led by our outdoor education program.

#### WEL 04 - Senior Year Wellness

Students take on leadership roles during the all school adventure days and also serve as leaders for the four day, three night junior/senior expedition trips. Additionally, they support the outdoor education program in packing out for the expeditions trip.