

# Randolph Union

## Course Catalog SY 2021 - 2022 (Version 2.0)



Education, therefore, is a process of living  
and not preparation for future living.

- John Dewey

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## **Randolph Union**

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# Mission & Standards

The OSSU School Board has given RU an important charge: to prepare our students for the next stages of their lives. This is a broad and significant mandate. It requires that we focus on the skills and dispositions needed for young people to be active and engaged **agents in our democracy**, productive and innovative **contributors to the economy**, and **empathic and ethical citizens** in our local and global communities. The RU Faculty has high expectations of our students - and of ourselves - in all of these domains. We articulate essential expectations as graduation standards, aligned to our board's expectations and to state requirements for proficiency in diverse subject areas. Our graduation standards fall into two main categories:

- Foundational Knowledge & Skills (Content Area Graduation Standards)
- Habits of Heart & Work (Transferable Skill Graduation Standards)

These graduation standards guide our community daily, from classroom learning intentions, to assessment rubrics, to senior project, to special honors and awards for both students and teachers. In alignment with VT Act 77, a proficiency-based graduation system that is explicitly tied to these standards is being put in place for the RU class of 2020.

## Habits of Work and Heart

(Transferable Skill Graduation Standards)

### Habits of Work

- **Organization:** Efficiently organizes priorities, **time, belongings, materials**, and resources in school, at home, and in remote learning.
- **Productivity:** Completes work according to deadlines and expectations, both at school and in remote, synchronous or individual work time.

### Habits of Heart

- **Respect for Others:** Respects the identity of others, listens, empathizes, seeks to understand, works to keep the community safe, and safely intervenes to protect others.
- **Personal Responsibility:** Cares for own physical and mental wellness, keeps safe physically and emotionally, shows self-control.

Link to our more detailed Habits of Work/Heart expectations: [here](#) (to be updated for SY 21-22).

# Foundational Knowledge & Skills (Content Area Graduation Standards)

## ENGLISH

<p><b>Writing:</b> Students write effectively for a wide range of purposes, genres, and authentic audiences across multiple disciplines.</p>	<p><b>Language:</b> Students can accurately use conventions of Standard English, figurative language, and strategies to support an expanding vocabulary.</p>	<p><b>Presentation:</b> Students present information, findings and supporting evidence on a topic, conveying a clear and distinct perspective to an authentic audience.</p>	<p><b>Discussion:</b> Students demonstrate respectful listening and active engagement across a range of forums for dialogue, discussion, and debate.</p>	<p><b>Reading:</b> Students can read, comprehend, and analyze a wide range of literary and informational texts to draw conclusions about the text, themselves, and the greater community.</p>	<p><b>Listening:</b> Students can comprehend, evaluate and use information provided in different auditory formats.</p>
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## FINE ARTS

<p><b>Create:</b> Students communicate powerfully through the arts, demonstrating fluency in essential skills, terminology and processes with an artistic problem solving approach.</p>	<p><b>Present:</b> Students communicate meaning and demonstrate skills through public exhibition and performance.</p>	<p><b>Connect:</b> Students create connections between the arts, history, culture, politics and other domains.</p>	<p><b>Respond:</b> Through critique and analysis of the work of masters and others, students understand their own skills and unique place in fine arts traditions.</p>
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## HEALTH

<p><b>Core Skills:</b> Students state health-enhancing positions on a topics and support positions with accurate information.</p>	<p><b>Analyzing Influences:</b> Students analyze the influence of family, peers, culture, media and technology on the behavior of individuals, local community and the broader society.</p>	<p><b>Accessing Information:</b> Students access reliable information, products and services that enhance the health of individuals, the local community and broader society.</p>	<p><b>Communication &amp; Advocacy</b> Students use interpersonal communication to advocate for personal, family and community health.</p>	<p><b>Decision-making &amp; Goal Setting:</b> Demonstrate the ability to self-regulate, and use decision-making skills and goal setting to enhance health.</p>
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## MATH

<p><b>Mathematical Practices:</b> Make sense of problems and persevere in solving them; attend to precision while constructing viable arguments and critiquing the reasoning of others. Interpret, use and create mathematical models of real world events.</p>	<p><b>Number &amp; Quantity:</b> Extend properties of counting numbers to understand and use other types of numbers; reason quantitatively and use units to solve problems. Observe these properties in applications.</p>	<p><b>Algebra:</b> Perform arithmetic operations with polynomials, including rational expressions; create equations that describe numbers or relationships; reason with equations and inequalities. Analyze and reflect on various connections in real world applications.</p>
<p><b>Functions:</b> Interpret and build functions. Predict outcomes and patterns in real world events.</p>	<p><b>Geometry:</b> Understand congruence; apply knowledge of similarity, right triangles &amp; right triangle trigonometry; express geometric properties with equations; apply knowledge of geometric measurement and dimension. Use effective language to describe geometric relationships in our surroundings and everyday situations.</p>	<p><b>Statistics &amp; Probability:</b> Interpret and use statistical data to make decisions; apply knowledge of probability rules to make inferences. Reflect on effective or ineffective presentations of data or predictions.</p>

## PHYSICAL EDUCATION

<p><b>Knowledge and Motor Skills:</b> Demonstrate proficiency in a variety of motor skills and movement patterns.</p>	<p><b>Application and Strategy:</b> Apply the knowledge of concepts, principles, strategies, and tactics related to movement and performance.</p>	<p><b>Physical Fitness:</b> Demonstrate the knowledge and skills to maintain a healthy level of physical activity and fitness.</p>	<p><b>Safety and Respect:</b> Exhibit safe and respectful behaviors that show care for self, others, and our common resources.</p>	<p><b>Active Living:</b> Demonstrate the value of choosing physical activity for personal challenge, self-expression, and enjoyment of the local environment and resources.</p>
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## SCIENCE

<p><b>Developing &amp; Using Models</b> Students design, evaluate and refine models through an iterative cycle of comparing their predictions with the real world and then adjusting them to gain insights into the phenomenon being modeled. As such, models are based upon evidence. When new evidence is uncovered that the models can't explain, models are modified.</p>	<p><b>Planning &amp; Carrying-out Investigations</b> Students design investigations that generate data to provide evidence to support claims they make about phenomena. Data isn't evidence until used in the process of supporting a claim. Students use reasoning and scientific ideas, principles, and theories to show why data can be considered evidence.</p>	<p><b>Analyzing &amp; Interpreting Data</b> Students use digital tools to interpret data by identifying significant features and patterns. They also use mathematics to represent relationships between variables, and take into account sources of error.</p>
<p><b>Using Mathematics &amp; Computational Thinking</b> Students use mathematics to represent physical variables and their relationships, and to make quantitative predictions. They engage in computational thinking, which involves strategies for organizing and searching data, creating sequences of steps called algorithms, and using and developing new simulations of natural and designed systems.</p>	<p><b>Constructing Explanations</b> Student construct and revise explanations based on valid and reliable evidence obtained from a variety of sources (including students' own investigations, models, theories, simulations, peer review) and the assumption that theories and laws that describe the natural world operate today as they did in the past and will continue to do so in the future.</p>	<p><b>Designing Solutions</b> Students specify constraints and criteria for desired qualities of the solution, develop a design plan, produce and testing models or prototypes, select among alternative design features to optimize the achievement of design criteria, and refine design ideas based on the performance of a prototype or simulation.</p>

## SOCIAL STUDIES

<p><b>Inquiry:</b> Students use a process of questioning, locating, evaluating, analyzing, and synthesizing information in order to understand the world around them.</p>	<p><b>History:</b> Students use primary and secondary sources to gather information about the past to help them make sense of the present and decisions about the future.</p>	<p><b>Physical and Cultural Geography:</b> Students use geographic themes to understand the physical and cultural environment and propose solutions to local and world issues.</p>	<p><b>Economics:</b> Students apply the concepts of economics to evaluate their community, nation and world.</p>	<p><b>Civics, Government &amp; Society:</b> Students understand and exercise the rights and responsibilities of informed citizenship.</p>
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## WORLD LANGUAGES

<p><b>Language Acquisition Behaviors</b> Students engage in behaviors that facilitate development of skills in level-appropriate forms of non-native language communication.</p>	<p><b>Communication</b> Students can communicate about aspects of their daily lives in a non-native language.</p>	<p><b>Language Mechanics</b> Students understand the nature of language through comparisons of the non-native language to their own.</p>	<p><b>Exchange</b> Students connect with non-native language cultures.</p>	<p><b>Cultural Appreciation</b> Students are empathic toward other cultures and understand how language carries culture, values and beliefs.</p>
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# Graduation Pathways

## ***Commonality & Personalization***

Earning a diploma from RU means that students have demonstrated proficiency in our graduation standards. Pathways toward proficiency typically involve a blend of common/required experiences and personalized programs of study that align to individual student interests, goals and needs.

In a normal school year, one common expectation is that all students are expected to carry **7 courses** each semester. This typically includes the pathway requirements listed below.

### **Common Graduation Pathway Requirements**

English		4 full years
Mathematics		3 full years
Science		3 full years
US History		1 full year
Social Studies		2 full years
Phys-Ed		1.5 years
Health		0.5 years
Fine Arts		1 full year
World Languages		Standards are addressed through multiple pathways.
Senior Project		See detailed information on following page.

### **Promotion Requirements: Grade Level, Advisory Group, Etc.**

A student's grade level standing is used to determine Advisory placement and class activities. (A student in an 11th grade Advisory, for example, will be eligible to hold office in the junior class.) At the end of the first semester, Student Services will update grade level and class standings, awarding credit for all semester courses. **To be promoted from one grade/class to another, a student must have successfully completed the following, or equivalent:**

4	full year courses at the end of the freshman year, including 1 full English course.
9	full year courses at the end of the sophomore year, including 2 English courses.
14	full year courses at the end of the junior year, including 3 English courses.
20	full year courses at the end of the senior year, including 4 English courses.

# RU Middle School Program of Study

## Overview: School Year 21-22

The middle level program of study strikes a balance between choice based on interest and exposure to required areas of study. Here is an overview of important elements of the middle school experience.

### 7<sup>th</sup> Grade

In a typical 7<sup>th</sup> grade year, the year-long required courses are **English, Math, Science, Social Studies, Physical Education, and Fine Arts**. Students also take a required semester of **Health** Education and a semester of **World Language Exploration**. This array of courses meets middle school requirements of the State of Vermont Agency of Education, and curriculum is aligned with the same standards in which students must show proficiency later in high school.

A special note on Fine Arts: 7<sup>th</sup> grade Fine Arts includes a mixture of choral music, instrumental music, visual arts, and theatre arts. Students who have been studying an instrument in elementary school will be able to continue their studies. Students who have not yet enrolled in chorus or band will be offered exposure to the world of theatre arts. All students will continue their skill development in visual and performing arts. Flexible scheduling, individual lessons, and close collaboration between teachers allows us to meet the interests of a diverse student body.

Special note on World Languages: In 7<sup>th</sup> grade, students typically are exposed to basic skill development and cultural exploration in a world language. The State of Vermont requires proficiency in World Language standards to graduate from high school, and so we begin this learning for all students in 7<sup>th</sup> grade.

### 8<sup>th</sup> Grade

In a typical 8<sup>th</sup> grade year, the year-long, required courses are **English, Math, Science, Social Studies, and Physical Education**. Beyond these requirements, students are offered choices:

- World Languages: Spanish 1 or French 1
- Fine Arts: Band, Chorus, Visual Arts or Theatre Arts
- Other electives, schedule permitting

At the end of 7<sup>th</sup> grade, our school counselor works with students and families to determine the appropriate 8<sup>th</sup> grade program of study.

Special note on World Languages: Before graduating from high school, the state of Vermont expects students to have a basic level of proficiency in a world language. (Study of at least two years of a foreign language is recommended for students applying to a wide array of colleges.) The successful completion of Spanish 1 or French 1 in middle school will meet high school proficiency requirements. Students who do not take French 1 or Spanish 1 in middle school will be expected to take an equivalent course at some point in high school.

## Middle School at RU: More Info!

**Advisory:** Advisory at RU supports students in achieving academic and personal goals, and fosters respectful, empathic relationships that strengthen our community. In the academic realm, Advisors help students with Habits of Work like Organization and Productivity, help students get in touch with teachers for academic support, prepare students for Student-Led Conferences twice a year and help students maintain a portfolio of their middle school work.

**Call Back:** This is a special time built into the weekly schedule for enrichment learning activities or to receive extra support from teachers.

**Community Partners:** RU MS has several important partnerships that support our work. For instance, our core academic teachers work closely with the RU Innovation Center and community partners engaged with the IC. In addition, school counselors work closely with organizations like GEMS (Girls Empowered Motivated Strengthened) and the Clara Martin Center and others to connect students to community mentors and other supports. International travel and exchange starts at RU in the middle school with our travel to Japan, sustained by our local community partner, Friends of Shizuishi.

**Support Classes:** Many students enrol in classes for support. Some common supports include **Resource Room** with a special educator, **Project Achieve** to help with getting work completed, and **Math Lab** or **Literacy Lab** with a math or English teacher. We also have classes called **Core English Skills** for students who benefit from intensive support in reading. These support classes may take the place of other classes in a student's schedule, as determined by the team.

**Extra-Curriculars & Athletics:** There are many extra-curricular opportunities for students at RU. Past clubs open to Middle School have included Cooking, GLOW (a gay/straight alliance), the Ski & Snowboard Club, Campus Life Committee, Student Congress, and others. Athletic teams include Soccer, Basketball, Baseball, Track, Lacrosse, Gymnastics, and more. Our school website will have forms/updates from our Athletic Director.

**Honors & Awards:** We traditionally celebrate academic achievement with our Honor Roll at our Middle School Assemblies. We also have a "Habits Honor Roll" for students with strong performance in their Habits of Heart and Work. In addition, special Habits of Heart Awards, generated by peer nomination in Advisory, celebrate students who strongly exemplify these values.

**Innovation Center (IC):** Down the hallway of the Fine Arts wing is the Innovation Center, new to RU in school year 18-19, and overseen by our Director of Career & Workforce Development. Middle school learning connects to the IC frequently throughout the year when projects involve computer-assisted design (CAD), traditional tools like hammer and saw, and modern technology like the laser cutter, milling machine, and 3-D printers.

**Integrated Studies:** Throughout the year, 7th and 8th grade core academic teachers collaborate on project-based units that blend different disciplines together. These projects do not detract from time in core or elective classes. We continue to maintain an emphasis on important traditional assessments, such as tests, quizzes, research papers, science labs, seminar discussions, creative and expository writing. These units often require student collaboration and the practice of transferable skills (Habits of Work/Heart). They incorporate standards from Science, Social Studies, Math, and English. These

projects will give students the chance to apply academic skills in compelling ways. Some examples from past years: Local History Project, The Energy Project, Water & Human Impact, and more.

**Media Center / Library:** The RU Media Center offers much to RU Middle Schoolers. In addition to a wide variety of books and multimedia resources, the Media Center supports literacy in the curriculum through digital and audiobooks, classroom activities, and book promotion. Students have opportunities to participate in book groups and extracurricular clubs. The Library Media Center specialist also provides research and digital literacy skills in collaboration with classroom teachers.

**Math Acceleration:** The Common Core State Standards (CCSS) in math dictate a rigorous math curriculum in grades 7 and 8. This is an important foundation for all students. Students who achieve at or above proficiency can accelerate in high school by doubling up in math, typically in 10th or 11th grade. Students who are interested in acceleration in 7th or 8th grade will take an assessment in summer prior to the start of the next school year. This assessment measures proficiency in standards for grades 7-8, and is administered by the OSSD Math Director. Results are used to inform placement options in grades 7 - 9.

**Portfolios & Personal Learning Plans:** One of the most important parts of being a successful life-long learner is to know one's strengths and one's areas for improvement. With this in mind, we ask students to keep a portfolio of their work. Students use portfolios in conferences with families, and at the end of 8<sup>th</sup> grade they will "defend" their portfolio of work before a panel of faculty and students.

**Proficiency-Based Learning and Assessment:** In 2013, Vermont's Act 77 brought us the new Education Quality Standards (EQS), which require that high schools move away from graduation by "credit" or "Carnegie Unit," and develop systems for "Proficiency-Based Graduation." As a 7-12 school, our Middle School teachers align expectations to these same standards, adjusted to 7th and 8th grade levels. One change from past practice is that instead of regularly getting just one grade per class, students get grades and information on how they are doing in several standards for each subject area. For example, instead of just getting a "75" on a report card for in English class, students get information on how they are doing in reading, writing, discussion, etc. We feel this helps students (and their teachers!) have a better understanding of each student's strengths and areas for improvement. (Our Handbook on Proficiency-Based Graduation is available via this [link](#), and can be found on the school website.)

**Schedule of Classes:** Student Services sends home student schedules typically two weeks prior to the start of the school year. However, families are welcome to contact us at any time to discuss past, present, future classes.

**Student Services:** Kara Merrill is the counselor for 7<sup>th</sup> graders and their families. She will be able to help you with scheduling, Powerschool, counseling referrals and many other aspects of school life. She is in the office periodically over the summer and daily beginning Wednesday, August 14th. Please contact her with any questions, concerns or to schedule an appointment at [kmerrill@orangesouthwest.org](mailto:kmerrill@orangesouthwest.org) or 728-3397 ext. 143.

# Senior Project

[Note: May be updated for SY 21-22.]

Senior Project consists of six parts, all of which must be completed in a satisfactory manner and in strict compliance with the deadlines on the Senior Project Timeline. In May, a review panel will evaluate the entire year's work. The six parts of the Senior Project are as follows:

1. **PROPOSAL** In the spring of junior year, each student presents a proposal to a panel for mandated pre-approval in an area of study that challenges him or her and holds his or her interest during the yearlong process. The proposal includes a letter of intent, a working bibliography, a research question web, a signed mentor agreement and a parent permission form. The senior presents a proposal to a panel of community members and staff. The senior and his or her panel reach an agreement about what the Senior Project will be. (See Sr. Project Manual for more information.)
2. **PAPER** Each senior writes a 7 to 12 page research paper on a topic related to the Senior Project.
3. **PRODUCT** Each senior creates a learning experience that requires spending at least thirty (30) hours using knowledge gained from research and from working with a mentor.
4. **PORTFOLIO** The portfolio documents the process and journey the student used to complete his or her Senior Project. It will include the following:
  - a. **documents** pertaining to Senior Project
  - b. **time sheet** that records the time spent working on the product and a summary of what was accomplished during that time
  - c. **journal** reflecting on the work, the process and personal growth
5. **DISPLAY** The Open House in May will include the entire portfolio and product. The product might not be tangible; for example, the student might spend time tutoring or working at a service agency, but the portfolio will document what was done. Documentation might include photographs, videotape, or a slide show. Some students wish to participate in a performance as part of the documentation of their product. This usually takes place during the *Night of the Arts* in May. The Senior Project Open House in May is open for viewing by parents, students, panel members and the public.
6. **DEFENSE** Each senior will present an eight to ten minute oral defense of his or her entire Senior Project to the panel in May. The oral defense is followed by a five- to eight-minute question and answer period.

If a senior does not complete any one of the five parts in a satisfactory manner or does not meet one of the published deadlines, the student and his/her parent(s) will be notified that the senior is ineligible to graduate in June. At that point the senior may appeal to continue in the Senior Project process. (See Sr. Project Manual for more information.)

Senior Project is an important way for students – and our community – to engage in an exciting learning process that allows our students to demonstrate the independent learning skills they have cultivated over their time at Randolph Union.

# Multiple Pathways

## *Early College, ILOs, and More*

As noted above, pathways toward proficiency in our graduation standards are a blend of required courses and personalized options via “multiple pathways.” Below are descriptions of the multiple pathways that are open to students at Randolph Union. Some of these options are available only to students in the upper grades - but not all of them. Students, if you are not sure what options are open to you - or whether we might be able to make an exception to the general rule - just ask!

### **Independent Learning Opportunities (ILOs)**

Students – What do **you** want to study? RU offers Independent Learning Opportunities to students who wish to explore topics or disciplines in a depth that may be hard to achieve in standard classes. Past ILOs have focused on business management, nonfiction narrative writing, architectural drawing, sports journalism, goat farming, veterinary science, a study of the societal conditions that give rise to the need for animal shelters, sports nutrition, pre-season training, and a variety of foreign languages and cultures. Strong Habits of Work are a must – an independent work ethic is vital to student success in an ILO - and a “teacher of record” must approve the plan of study in accordance with the student handbook. An ILO is individually titled and can really make a student transcript or resume stand out. See a school counselor or our Director of Applied Learning for more information.

### **Early College at Vermont State Colleges**

With the 2013 passage of the Flexible Pathways bill (Act 77), Vermont's Early College Program has expanded with funds being made available to students for programs that are operated or overseen by one of the Vermont State Colleges or by an accredited private postsecondary school located in Vermont. See your counselor to learn about these early college opportunities. Students who attend any of these early college programs must complete RU Senior Project in order to graduate. To begin this process, students need to speak with their school counselor and complete the Early College Advisement Form.

### **Early College at VTC**

**VAST: Vermont Academy of Science & Technology** is a program for high school seniors at Vermont Technical College. This is an exciting chance for students to complete their final year of high school and first year of college at the same time. Students who successfully complete the VAST program receive a VAST diploma. Students may also receive a RU diploma if all RU graduation requirements, including Senior Project, are met. To begin this process, students need to speak with their school counselor and complete the Early College Advisement Form. (Note: There are certain RU Community Scholarships that become unavailable to students who do not receive an RU diploma.)

### **Dual Enrollment at Dartmouth College**

The Special Community Student High School Program at Dartmouth College allows eligible seniors to take one course per term during the fall, winter and spring terms. Juniors may enroll during winter and spring terms only. Students must be recommended by a high school principal, counselor or school official. The tuition for this program is free to the student. Students are responsible for their books and transportation.

### Dual Enrollment at Vermont State Colleges

High school juniors and seniors are eligible to take two college courses at Vermont colleges and universities tuition-free. Please see your school counselor for more information.

### CBL: Community-Based Learning

RU is proud to be continually expanding CBL opportunities for students. CBL opportunities allow students to leave the confines of the school while continuing to meet RU graduation standards in various content areas. Our current CBL, Entrepreneurship & Manufacturing, and Water Resource Management & Public Policy, offers work based learning and exposure. (Course descriptions for these CBLs can be found in the Science and PBL sections.) Our Director of Applied Learning works with all faculty to connect class content with hands-on experiences in the community.



### WBL: Work-Based Learning

Work-based learning at RU is possible through our Independent Learning Opportunity (ILO) program. The school maintains excellent relationships with regional employers. For more information, please see your school counselor or the Director of Applied Learning.

### VT Virtual Learning Consortium

In an effort to offer expanded course offerings to students, RUHS utilizes the online educational organization called the Vermont Virtual Learning Consortium (VTVLC). VTVLC courses are available to a limited number of students each semester with preference given to seniors and juniors. Sophomores will be considered on a space-available basis. Learn more about VTVLC by visiting [vtvlc.org](http://vtvlc.org). Interested students should talk with their school counselor about this opportunity.

### AP: Advanced Placement Courses

AP classes follow a national curriculum and learning is assessed by taking a national exam. High marks on the exam can earn a student credit at certain colleges. This is a unique learning opportunity that allows students to take college-level courses and exams here at RUHS. AP courses are available in biology, calculus, physics, language and composition, literature and composition, world history, U.S. history, and statistics. **It is expected that students enrolled in AP courses will take the corresponding AP exam. The exam cost will be paid by the school.**

# Applied Learning & The Innovation Center

## ILOs, Project-Based Learning, Integrated Studies, Community-Based Learning, and More!

- **Independent Learning Opportunities (ILOs):** RU offers Independent Learning Opportunities to students who wish to explore topics or disciplines in a depth that may be hard to achieve in standard classes. Past ILOs have focused on business management, nonfiction narrative writing, architectural drawing, sports journalism, goat farming, veterinary science, genetic modification, a study of the societal conditions that give rise to the need for animal shelters, sports nutrition, pre-season training, and a variety of foreign languages and cultures. Strong Habits of Work are a must – an independent work ethic is vital to student success in an ILO - and a “teacher of record” must approve the plan of study in accordance with the student handbook. An ILO is individually titled and can really make a student transcript or resume stand out. See a school counselor or our Director of Applied Learning for more information.
- **Community-Based Learning (CBL):** The RU Director of Applied Learning has developed several courses that immerse students in learning about the world of work in our local economy: “Water Management & Public Policy,” and “Introduction to Entrepreneurship & Manufacturing,” taught with and at the important local company, GW Plastics.
- **Project-Based Learning (PBL):** Our PBL courses engage students in **collaborative approaches to solving common problems** in our community and broader society. In the past, we have offered PBLs on a wide range of topics: Racial Justice, Climate Change, Restorative Justice, International Development & Travel, Local Community Service (Interact), Food Systems, Digital Music Production, Emotional Wellness, Economic Inequality, and more. More info below about this year’s offerings!
- **The Innovation Center Applied Learning Units of Study:** These units allow students to develop academic proficiencies as well as use traditional and contemporary high tech tools. The sky’s the limit when it comes to what teachers and students can do in the IC! Past units have included 7th grade math students building bird-houses with hammers and nails, book-binding, thematic board game design, and wall-mounted 3-D representations of a Vermont-version of a students’ personal “spirit animals.” High school social studies classes used computer-assisted design (CAD) and traditional tools to create visual representations of learning about the industrial revolution. More info below about this year’s offerings!
- **Integrated Studies:** Our middle school teachers collaborate across disciplines to create special units of learning called “Integrated Studies.” The Tarrant institute for Innovation in Education has been an important support for this work in the past. Here at RU, our Applied Learning Director and the Innovation Center classrooms and resources are key supports for teachers in designing and implementing Integrated Studies units. More info below about this year’s offerings!

# PBL Offerings SY 21-22

[Note: More offerings may be added before Fall of 2021!]

## **Racial Justice: How can we advocate for and create a more equitable community? (English/ Social Studies standards)**

In this PBL Challenge, students will respond to increasing community concerns about social injustice in our local and national community. Students will work with area experts to establish and maintain a Racial Justice Student Alliance here at RU, with the goal of raising awareness around racial injustice to create a safer and more educated environment for all community members. Students will study the history of social injustice in our country, including the creation of race, the function of class division, and the history of exclusion based on gender and sexuality. In studying these histories and contemporary impacts, students will be encouraged to question and reimagine the power dynamics that contribute to an inequitable society . Through the PBL, students will work with their peers to educate our school community about current issues, and will work with teachers to develop inclusive curricula. Throughout the year, students will work to recruit RJSA members, establish goals, and host regular meetings and events. In participating in this PBL, students will learn about organizing around social issues and advocating for change through education and civil resistance. Career Pathways: This PBL challenge will appeal to students interested in careers in social justice, community organizing, social work, political science, history, and education.



### **Food Systems: How do we create community through food? ( English standards)**

The Vermont Department of Health recently released a simple way to understand chronic disease in VT: 3-4-50. 3 behaviors lead to 4 diseases that result in 50% of deaths in the state. Many of these conditions are rooted in what we eat, so what do we do about all of this? Most consumers believe that eating healthy is cost-prohibitive, often selecting unhealthy, yet affordable products to feed themselves and their families. In this PBL Challenge, we will do the research necessary to understand the issues that prohibit people from engaging in a more healthy lifestyle, meeting with experts, getting out into the community, and advocating and implementing change in the school and local community. We will take a journey together through the food systems pathway, from germination to propagation to harvest and distribution, all the while analyzing the challenges of sustainability, cost, and other factors that may contribute to the myth that eating healthy is complicated and unaffordable, and inviting and welcoming others to create community through a study of food systems. In addition, this PBL spends a significant amount of time in the kitchen learning food preparation skills and producing affordable, high quality homemade foods. Career Pathways: This PBL Challenge will appeal to those students interested in career fields such as sustainable agriculture, food service, supply chain management, economics, political science, biology, and nutrition.

### **Restorative Justice: Do our schools and courts treat people fairly? (English Standards)**

Do VT schools discipline students fairly? Do some kinds of students get suspended more often than others? Does a school suspension have any connection to dropping out? And what about our legal system: Do the courts treat people fairly? Does VT have too many prisons - or not enough? Should people with mental health challenges go to jail if they commit a crime? How should people with opiate addiction be treated when in custody? In this PBL challenge, we will begin by raising and researching questions like these. Then we will look at Restorative Justice practices, and how schools and communities can find ways to heal and repair - while still holding people accountable for wrongdoing. We will learn from local advocacy groups, law enforcement, human rights, and legal experts to help us determine what we can do in our school and community to ensure that we treat people fairly - even when they make mistakes and do harm to others. Career pathways: This challenge will appeal to students interested in career fields such as law, criminal justice, public policy, and human rights.

### **Mindfulness and Movement Exploration: How can we improve our mental and physical wellness?**

**(Physical Education standards)** This PBL will explore the ways in which an active lifestyle, good nutrition, mindfulness, and a sense of purpose can all help a person to live a healthy life. Students will engage in journaling, goal setting, weight-bearing exercise, yoga, outdoor activities and more. Community partners will help students understand the roles that these elements play in their lives and expose students to a variety of paths to self-care and wellness. Career Pathways: This PBL Challenge will appeal to those students interested in career fields such as physical education, physical training, physical therapy, mindfulness, nutrition, kinesthetics, and others.

### **Digital Music Performance: How can technology democratize music production? (Music**

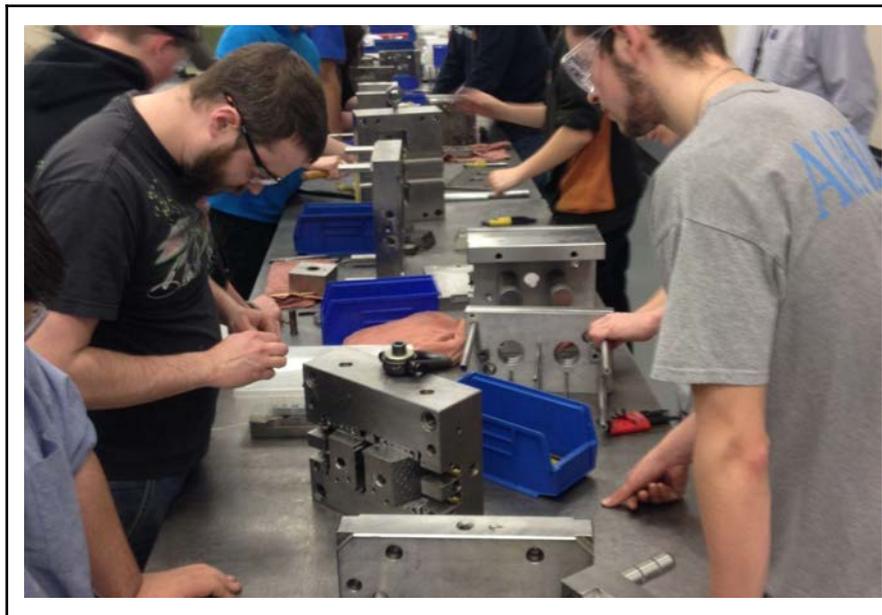
**standards)** Prior to the “desktop revolution,” the ability to create music digitally was out of reach for all but a few successful and wealthy composers. Today, technological tools that were only a dream for most people in the past are now commonplace, and the Internet allows us to share our ideas with the world.

This PBL challenge will focus on understanding how these tools work and how they can be used to compose and share evocative music and meaningful dialogue. This will involve exploring music theory (rhythm, melody and harmony), basic piano skills, composition, history, engineering, physics, live sound reinforcement, communication, writing, and psychology. While this list of disciplines (particularly the musical ones) may sound daunting, the computer makes most of them accessible even if you are not a skilled performer. Topics will be addressed by focused individual and group projects and will culminate in the submission of a song to a class album. Career Pathways: This PBL Challenge will help prepare students for almost any career in communications requiring content creation skills and teamwork such as video editing, web design, digital photography, theater, copywriting, live sound, and broadcast production.

## CBL Offerings SY 21-22

### **CBL: Entrepreneurship and Manufacturing**

How does manufacturing fit into the fabric of Vermont, and how has technology changed the manufacturing workplace? How can any person with a great idea for a product turn that idea into a solid business? Students will develop in-depth answers to these questions as they pursue this Community Based Learning (CBL) offering at the GW Plastics plant in Royalton, VT. From a request for a quote (when a company asks the manufacturer to build them a product), to designing the molds on a CAD system and then building them, to purchasing the necessary raw materials, to scheduling, programming, and employing the state-of-the-art machines and robots, to making the product (and ensuring each piece passes a quality test), right to finding the best way to shipping off the finished product, students will learn firsthand the capacities, challenges, and rewards of entrepreneurship and manufacturing.



**CBL: Water Management: Public Policy and Practicality, or *How Do We Deal with Water?***

One of Vermont's greatest resources is its water: you can't depend on your Mountain State to remain Green unless you understand how to manage water and keep your supply of it healthy. Water is a natural, vital, and incredibly powerful force. It is necessary to maintain life, but it is also capable of astounding destruction. Destruction by water can come slowly, quietly trickling, or it can rise and arrive in a seeming instant: rushing madly in. From drinking water wells to storm water to the water that floats our boats, water seeps into nearly every aspect of civic life, and it impacts nearly every career. This course looks at the public policy that keeps our water safe, the engineering that keeps us (relatively) safe from water, and the science behind water quality testing and cleanup. We will make use of many field trips to see science in action, providing many hours of experience witnessing policy and science at work. It is a good choice for students wishing to pursue further education and careers in Environmental Science, Civil Engineering, Public Policy, Agriculture, & Forestry.



# STEM & Integrated Studies

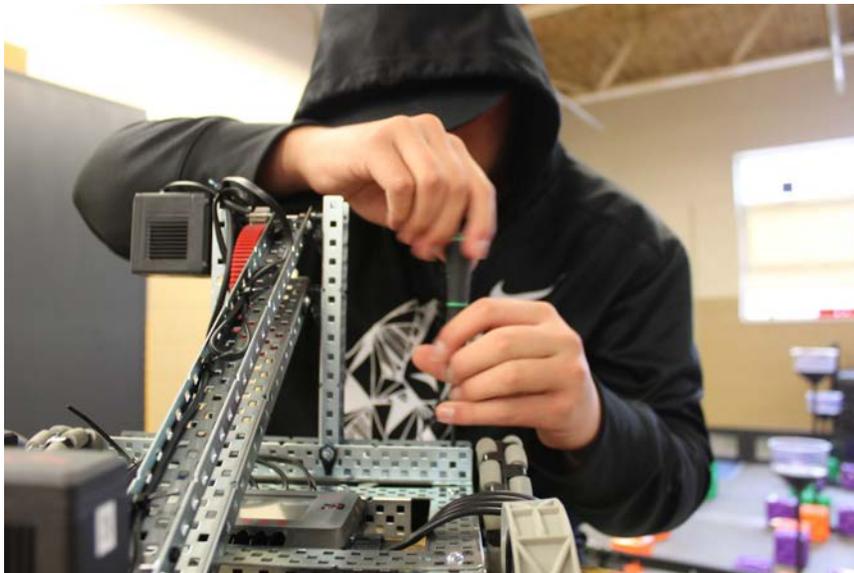
## **Innovation Management: What does it take to run a business or organization?**

What does it take to run an organization or a business? The majority of workers in Vermont are either self-employed or work for very small companies, but all workers benefit from having a sense of how a business runs. This course ties together what you are learning in core classrooms with the entrepreneurial and business thinking that is so important in our adult lives. Students in Innovation Management are responsible for running the school's Innovation Center, from bookkeeping and budgeting to monitoring safety to maintaining inventory to product development and production using the state-of-the art equipment for fundraising. Students will gain experience in computer-assisted design (CAD), old-fashioned hand tools, and process development. Students who take this course agree to a managerial role in the school environment. We will build evidence of applied math, engineering, and visual arts, and language arts into our portfolios.

## **CODING**

**MS Grade 8 Exploratory Coding & Robotics** As part of the grade 8 elective rotation, students will work together to solve short robotics challenges, and will learn some coding basics.

**HS Computer Science Principles - Full-year** How do we program to solve a problem, to perform a task, to entertain? This course introduces students to the breadth of the field of computer science. Students will learn to apply computer science to solve problems through the development of algorithms and computer programs. Students will also explain how computing innovations and computing systems, including the Internet, work, explore their potential impacts, and contribute to a computing culture that is collaborative and ethical.



## **ROBOTICS**

**HS Robotics I:** This course provides an introduction to robotics for students with no programming background using Vex Robotic kits. Using the CCSS math practices, students will learn to construct, control and program these robots through investigative and exploration activities. Research projects will expose the students to the engineering process.

**HS Robotics II:** (Successful completion of Robotics I or equivalent experience is required.) This course will continue the development of the engineering skills necessary to advance previous robot programs and design. Students use mentoring to increase their understanding of required programs. More rigorous research projects or activities will be expected. Students may partake in the regional Vex Robotics competition.

## ***INTEGRATED STUDIES***

In the Middle School and in the High School, teachers and students work in and with the IC to design units of study that integrate technology with science, the humanities and other disciplines. Some units of study include:

### **Social Studies 10: Industrial Revolution Integrated IC Unit**

Social Studies 10 students begin their exploration of modern world history by studying the ways in which the Industrial Revolution shaped societies. Working with the various tools and machines available in the Innovation Center, students design their own projects to address the Essential Question “How did the Industrial Revolution change the world?” Student projects need to demonstrate/embody their thesis statement response to that question, and can include a variety of materials and designs. Students also consider how the process of making these projects compares to manufacturing processes before and after the Industrial Revolution. At the end of the unit, students present their work in a Gallery Walk format, providing constructive feedback to others through written comments. In addition to practicing content area skills through the application of hands-on construction and design skills, students also use this early unit to develop effective working relationships with their peers through their different levels of expertise in the Innovation Center.

# Humanities: English

It was books that taught me that the things that tormented me most were the very things that connected me with all the people who were alive, or who had ever been alive.

- James Baldwin

**Mission:** *In the English department, it is our mission to contribute to a literate community by teaching students to read, speak, write, listen and think in a variety of contexts, recognizing language as an essential tool in problem-solving.*

**Typical course sequence:** *Students typically take English 9 in 9th grade and then English 10 in 10th grade. The other two English courses that students take during their four years of high school vary. 9th and 10th graders may take Jr/Sr electives by permission of the instructor.*

## 9th & 10th Grade Courses

**English 9:** In this class, students will develop their reading, writing, speaking and listening skills by exploring various themes connected to Social Studies 9. Students will write personal, narrative, and analytical essays, as well as participate in a variety of discussions. Skills building will focus on active reading strategies and productive writing processes. A range of texts will be used, including short stories, poetry, fiction and nonfiction. Students will explore how we read texts to better understand our world. Through this lens, they will investigate how social issues like oppression, poverty, discrimination, and gender affect individuals and communities, and how we can use this knowledge to shape change.

**English 10:** In English 10, students will study texts from different world regions and time periods in order to continue developing their critical thinking, writing, and discussion skills. Students will read a variety of short stories, poems, novels, and non-fiction texts, and will be assessed through different writing, reading, discussion, and presentation assignments. Students will have numerous opportunities to demonstrate proficiency in different skill areas through projects with creative choice. Students will be asked to consider challenging ethical questions relevant to current issues through their study of both fiction and non-fiction texts.

## Junior/Senior English Courses

**Advanced Placement (AP) Language & Composition:** Advanced Placement Language and Composition is a college level course designed to prepare highly motivated students for success on the AP Language exam. Following The College Board™ syllabus, students in AP Language will study and develop evidence-based analytic and argumentative essays that proceed through several stages or drafts. Students evaluate, synthesize, and cite research to support their arguments. Throughout the course, students develop a personal style by making appropriate grammatical choices. Additionally,

students read and analyze the rhetorical elements and their effects in current and past non-fiction texts, including graphic images as forms of text, from many disciplines and time periods.

**American Literature:** Students will read a variety of American novels, spanning from commentaries on our first settlements in New England to contemporary and postmodern experiments in literature, as well as short stories and poetry by American writers. Students will tackle sophisticated college-level texts and will approach the literature in a critical and purposeful way. Students will generate persuasive and analytical responses to literature, and showcase their skills in evidence gathering, synthesizing information and writing focused thesis statements. Texts may include, but are not limited to the following: *The Great Gatsby*, *Slaughterhouse V*, *Their Eyes Were Watching God*, *The Things They Carried*, *Death of a Salesman*, *Raisin in the Sun*, *Ellen Foster*, *The Awakening*.



**Creative Writing:** In this course you will read and write creative prose and poetry. The readings will provide models for the writing assignments, which are staged over a period of one to four weeks, with ample opportunity for feedback and revision. Our goal as a class is to gain a greater understanding of the writing process and the meaning of writing by reading various author interviews and essays. Through a variety of writing exercises, you will practice your craft, and learn what makes your personal voice in writing unique. As a class we will develop a protocol for critically discussing others' works and evaluating our own.

**Senior English:** Students will read and write and read and write some more! Students will focus on Senior Project writing requirements and college application essays. This class focuses primarily on the technical aspects of writing well, although students will be responsible for reading a variety of literary texts as they continue to cultivate analysis skills.

## Flexible Pathways: English

PBLs: PBL electives that may meet graduation standards in this subject area include:

- **Racial Justice PBL**
- **Restorative Justice PBL**
- **Food Systems PBL**

See the PBL offerings section for more information!

ILOs:

- Talk to your counselor for more information or if you have an idea for an ILO in this area.

## Future Offerings

*Our offerings shift based on enrollment and need. Sometimes we rotate offerings from one year to another. Potential future offerings include:*

**Advanced Placement (AP) Literature and Composition:** Advanced Placement Literature and Composition is a college-level course designed to prepare highly motivated students for success on the AP Literature exam. Following The College Board™ syllabus, students in AP Literature will study representative works from various genres and periods at a collegiate level to sharpen their awareness of language and their understanding of the writer's craft. Frequent writing assignments will focus on the critical analysis of literature. Additional writing includes creative and expository pieces in personal essay, narrative, and poetry, as well as a research paper. Upon successful performance on the Advanced Placement exam, students may earn up to three college credits and/or advanced placement in college English. A significant summer reading and writing assignment is required for this course.

**Dystopian Literature:** In this class, we'll look at worlds gone horribly wrong, where totalitarian governments crush individual rights, where the dream of a perfect society has turned into a nightmare. We'll also look at our own world, and discuss whether these science fiction stories might shed some light on real events and trends in modern society. If you're a fan of *The Hunger Games* or *Divergent*, you might want to see where Susan Collins and Veronica Roth got their inspiration. Reading list will be determined largely by student interest, but may include: *1984* by George Orwell, *Brave New World* by Aldous Huxley, *The Handmaid's Tale* by Margaret Atwood, *Fahrenheit 451* by Ray Bradbury, *Lord of the Flies* by William Golding or *The Road* by Cormac McCarthy. The culminating project in this class will be to create your own dystopian narrative.

### Poetry Workshop

Students will address the questions, "What is a poem?" and "What makes a poem different than a story?" as well as, "Do poems have to rhyme?" in a workshop style format. Students will study the works of traditional and contemporary poets – identifying and defining writing tools and poetic devices employed by these writers. Students will compare and contrast styles and forms of poetry. Students will write a minimum of one poem per week to be shared and discussed in our constructive and critical writing community. Students will assemble a poetry portfolio to demonstrate their knowledge and learning. Poets studied may include, but are not limited to the following: Matthew Dickman, Tony Hoagland, Billy Collins, Mary Ruefle, Lucille Clifton and Elizabeth Bishop.

### Non-Fiction

Students will move away from fictional literature to study essays, documentaries, biographies, photographs, print/radio/web journalism and other books exploring popular social, scientific, political and economic commentary. Students will be selecting an issue of interest/controversy, writing in a journalistic style, and designing a project to engage the community based on their learning. Authors of interest may include, but are not limited to: Oliver Sacks, Daniel Pink, Malcolm Gladwell, Thomas Friedman, Tracy Kidder, John McPhee, Studs Terkel, Levitt and Dubner. Vermont Field of Knowledge Standards include: Diverse Literary Traditions; Response to Text; Point of View. Vermont Vital Results Standards: Writing Dimensions; Writing Conventions; Responses to Literature; Information Technology; Research.

### World Literature

Students will study a wide range of literary works by authors from five of the seven continents. As our world becomes increasingly global due to the influence and impact of the Internet, students will brush up on their understanding of non-Western cultures and their literary traditions.

Students will generate personal essays, persuasive and analytical responses to the literature, and showcase their skills in evidence gathering, synthesizing information, and writing focused thesis statements. Texts may include, but are not limited to the following: *Things Fall Apart*, *Midnight's Children*, *The Samurai's Garden*, *The Kite Runner*, *Red Azalea*, *To Live*, as well as short Works by *Gabriel Garcia Marquez*, *Jorge Luis Borges*, *Isabel Allende*, *Haruki Murakami*, *Jhumpa Lahiri*, *Edwidge Danticat*.

### **Food and Travel Writing**

Students will examine contemporary food and travel writers – their writing styles, medium, and topics of exploration. Students will publish their thoughts on food and travel in a blog, video, school or local newsletter. Students must be accountable when “on assignment” off-campus, as they make and write their observations of new people, places, and food. In the second half of the semester, students will be responsible for cooking a meal, designing an ideal restaurant experience, and writing critical food and restaurant reviews for/of their peers. Resources may include, but are not limited to the following: Food Network, Travel Channel, and smittenkitchen.com.



# Humanities: Social Studies

To be hopeful in bad times... is based on the fact that human history is a history not only of cruelty, but also of compassion, sacrifice, courage, kindness. What we choose to emphasize in this complex history will determine our lives.

- Howard Zinn, American Historian

**Mission:** *In the social studies department, it is our mission to aid students in understanding the development of human society and to help them acquire the skills for the continuation of that society. We want students to understand their places in societies, both modern and past, and understand how different changes and continuities have connected the two. We want students to know how and why social change occurs and how American and global institutions have enhanced that change. Upon completion of our curriculum, students should be able to use inquiry to increase their understanding of history, geography, civics and economics to analyze historical events and propose solutions to current global, domestic, and local issues.*

**Typical course sequence:** Students typically take US History I in Grade 9 followed by The Human Experience in Grade 10, and by US History II in 11th grade.

## **US History I (Grade 9)**

US History I provides foundational knowledge of significant events, individuals, and trends in United States history from the colonial era through the American Civil War. In cooperation with English 9, the course connects social and political issues from these eras to modern-day America. The course uses readings, expository writing, and seminar discussions to develop evidence-based civil argumentation skills.

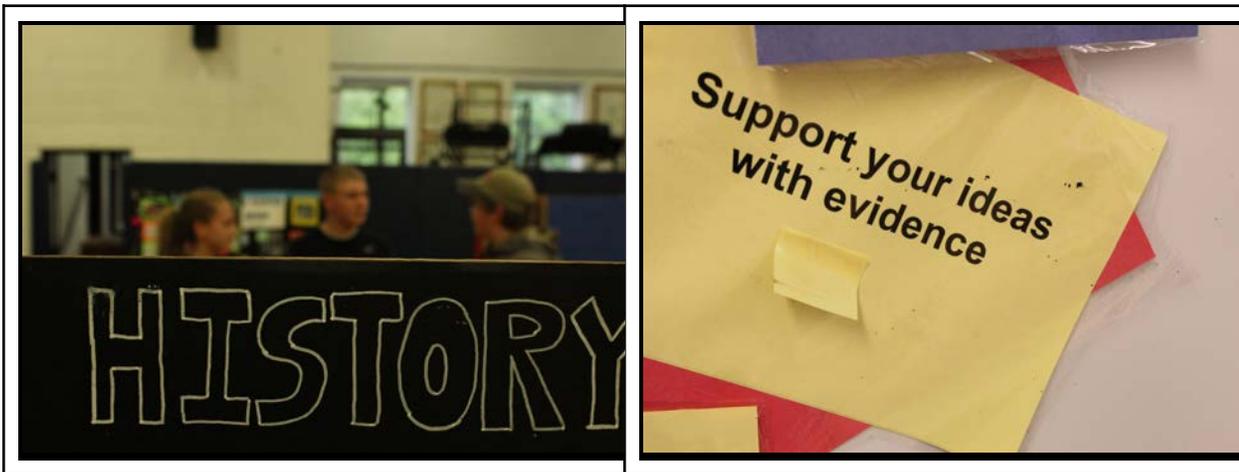
## **Modern World History (Grade 10)**

In this class, students examine the Essential Question “What forces have shaped the modern world?” Students begin their study with the Industrial Revolution and creating projects in the Innovation Center, followed by units on revolutions throughout the 19th and 20th centuries, colonization and decolonization in Africa, World War II and the Holocaust, the Cold War, and globalization. Throughout the course students practice working with primary and secondary sources to better understand historical periods, and how we can use historical artifacts to understand our present world. Students build on research skills throughout the year, culminating in a 10th grade research paper on a topic of their choice that addresses a question of historical significance within the modern world history period.

## **US History II (1865 - present)**

This course explores American history from the Reconstruction period through the present day. Using case studies, role plays, seminar discussions, oral history interviews, and independent research, students will explore the events and historical forces that shaped the world we live in today, and evaluate various perspectives about the lessons we should learn from these events to help us make

sense of the problems we face today. This class will focus on developing research and writing skills to prepare students for Senior Project, and on developing the knowledge and skills to be informed, engaged citizens.



### **AP World History**

The AP World History course focuses on developing students' understanding of world history from 1200 CE to the present. Students investigate the content of world history for significant events, individuals, developments, and processes in four historical periods, and develop and use the same thinking skills and methods employed by historians when they study the past. The course also provides five themes that students explore throughout the course in order to make connections among historical developments in different times and places encompassing the five major geographical regions of the globe: Africa, the Americas, Europe, Asia, and Oceania. Students will focus much of their energy on preparation for the National Advanced Placement Examination in May.

### **AP US History**

AP U.S. History is designed to be the equivalent of a two-semester introductory college or university U.S. history course. In AP U.S. History, students investigate significant events, individuals, developments, and processes in nine historical periods from approximately 1491 to the present. Students develop and use the same skills, practices, and methods employed by historians: analyzing primary and secondary sources; making historical comparisons; utilizing reasoning about contextualization, causation, and continuity and change over time; and developing historical arguments. The course also provides seven themes that students explore throughout the course in order to make connections among historical developments in different times and places: American and national identity; migration and settlement; politics and power; work, exchange, and technology; America in the world; geography and the environment; and culture and society.

### **Introduction to Economics (Semester-long)**

You may think it's all graphs and numbers. You may think that Economics is boring. You may think that you could *never* understand terms like "collateralized debt obligations" or "aggregate demand" and that even if you *could*, it would never help you in your life. But you'd be wrong. This course is tough, but it is also practical, interesting and extremely relevant. By the end of the semester, you will be able to use economics

to predict how gas and food prices might change over time, decide how best to pay for college or a car, evaluate politicians' plans to fix the economy, invest your time and money most effectively, and decide for yourself how worried you should be about our national debt. Completing homework, studying for quizzes and actively participating are keys to success in this course.

### **Archaeology Case Studies in the American Southwest I (Spring Semester)**

This course provides an introduction to archaeological theory and methods through the study of the Ancestral Puebloan (Anasazi) peoples of the Four Corners Region. Students will explore the development of civilization from the Archaic era up through Modern Puebloan societies, including the cliff-dwellers of the Pueblo II era. Students will also analyze and propose solutions to contemporary issues that face indigenous peoples in the Southwest. Students who satisfactorily complete standards in this course will be eligible to take Archaeology Case Studies in the American Southwest II (fall of 2022) which will culminate with a trip to the Crow Canyon Archaeological Center in Cortez, Colorado.

### **Sociology: Nature and Nurture; Rights and Wrongs (Semester Long)**

Once you have taken Sociology, you will never look at the world the same way again. This is because Sociology is not a body of knowledge, but a way of thinking about how human societies function. We'll ask (and attempt to answer) questions like: "What attributes do all cultures share?" "Are we born with our morals, or do we learn them?" "What are the unwritten rules of social interaction and what happens when they are broken?" and "Under what conditions will ordinary people behave in extraordinarily evil ways?" If you take this course, expect to read, write and share your ideas in class on a regular basis; I promise it won't be boring, but this is not an elective you can coast through. The final exam will be a research project in which you investigate a topic that interests you, collect and interpret data, and present your findings.

### **Flexible Pathways: Social Studies**

PBLs: PBL electives that may meet graduation standards in this subject area include:

- **Interact**
- **Racial Justice**

See the PBL offerings section for more information!

ILOs:

- Talk to your counselor for more information or if you have an idea for an ILO in this area.

### **Future Offerings**

*Our offerings shift based on enrollment and need. Sometimes we rotate offerings from one year to another. Potential future offerings include:*

**Famous Supreme Court Cases** Students will use role-play activities, discussions, presentations, and response papers to probe the purposes, degrees, and ramifications of law. Some of the many skills and concepts addressed in this course include critical evaluation, research and analysis, synthesis and application, citizenship, and human rights. Willingness to be an active and informed participant in classroom discussions is absolutely essential.

**The 1950's: A Seminar** Students in this course will explore topics such as the postwar economic boom, US foreign policy, popular American culture, and the Cold War in greater depth. We will examine a selection of art, literature, music, and film from the period. Works by Loren Baritz, Norman Rockwell, Betty Freidan, David Halberstram, Lorraine Hansberry, Studs Terkel, Grace Mettaliou, Elvis Presley, and Sloan Wilson may be given particular attention. Site visits to 1950's landmarks, and a reading of Howard Frank Moser's *Northern Borders*, will be expected in further exploring this time period.

**Current Issues and Trends**

The Current Issues course provides opportunity for applying inquiry, analysis, and deliberative skills on: human rights and social justice issues; geopolitical relationships and “hot spots” in the world. Every two weeks we will research and report our findings on the issue/theme being covered. These themes will include, but are not limited to: poverty, human rights, human trafficking, global security, gender issues, crime and punishment, famine and food insecurity, war and conflict, economic equity, religion, and access to education. Connections among history and social science disciplines provide a context for developing creative, integrative perspectives on current issues.

**Psychology**

This course focuses on individual behavior and why an individual thinks, feels, and reacts to certain stimuli. Major emphasis will be placed on research methods, stages in childhood and adolescence, how the brain works, altered states of consciousness, which may occur through sleep deprivation, sensory deprivation or overload, neurochemical imbalance or trauma, psychological testing, and psychological disorders.

# Mathematics

In the broad light of day mathematicians check their equations and their proofs, leaving no stone unturned in their search for rigour. But, at night, under the full moon, they dream, they float among the stars and wonder at the miracle of the heavens. They are inspired. Without dreams there is no art, no mathematics, no life. - M. Atiya

**Mission:** *The mission of the mathematics department is to provide students the mathematical tools to analyze and communicate about the world around them. To this end, the department provides students with systematic, logical problem-solving strategies. This is accomplished via multi-faceted experiences where students first apply critical thinking skills to achieve clarity and focus on situations or events. They then use these skills to translate a problem to a mathematical model, and solve. To this result, students are able to communicate and defend their observations and conclusions using the language of mathematics.*

## Math Curriculum and program:

RUHS offers a sequence of Common Core math courses published by Carnegie Learning. This program was adopted in grades 7-11 for the 20-21 school year, and was implemented, with support from the publishers, throughout the challenges of our global pandemic. Its strengths in technological presentations, modeling, analysis, real world applications, and communication of learning were instrumental in moving our students forward in a trying time.

This program uses a rigorous integrated problem solving approach to enhance student learning habits through investigation of related topics and skills, much like those one could find in real life. Students will develop mathematical reasoning and computation skills through collaboration, critical thinking, and related skills practice. Integrated math is especially timely for our current need to support all domains of mathematics as effectively as possible in distance learning.

Our middle school offerings have, for a few years, had an integrated approach that combines different domains of math (pre-algebra, algebra, geometry, statistics, etc). RU students will continue in high school with an integrated curriculum that covers the traditional domains of Algebra, Geometry, and Statistics. We call it "AGS" for short.

A typical sequence is AGS 1 in 9th grade, then 2, and 3 in successive years. Students have opportunities for support through math labs and our math interventionist. Students have opportunities to accelerate and take Pre-Calculus, Calculus and/or AP Calculus by their senior year. This is typically done by doubling-up on math classes later in high school. Please see your school counselor with questions.

**AGS 1** (Algebra, Geometry & Statistics 1): This first class in our series of three courses uses a rigorous integrated problem solving approach to enhance student learning habits through investigation of related topics and skills, much like those one could find in real life. Students develop mathematical reasoning and computation skills through collaboration, critical thinking, and related skills practice. This instruction is supported through an online digital skills support program called Mathia. The content included in AGS

1 includes analysis and manipulation of functions, systems of equations and inequalities, coordinate graphing, one-variable statistics, constructions, and rigid motion congruence theorems.

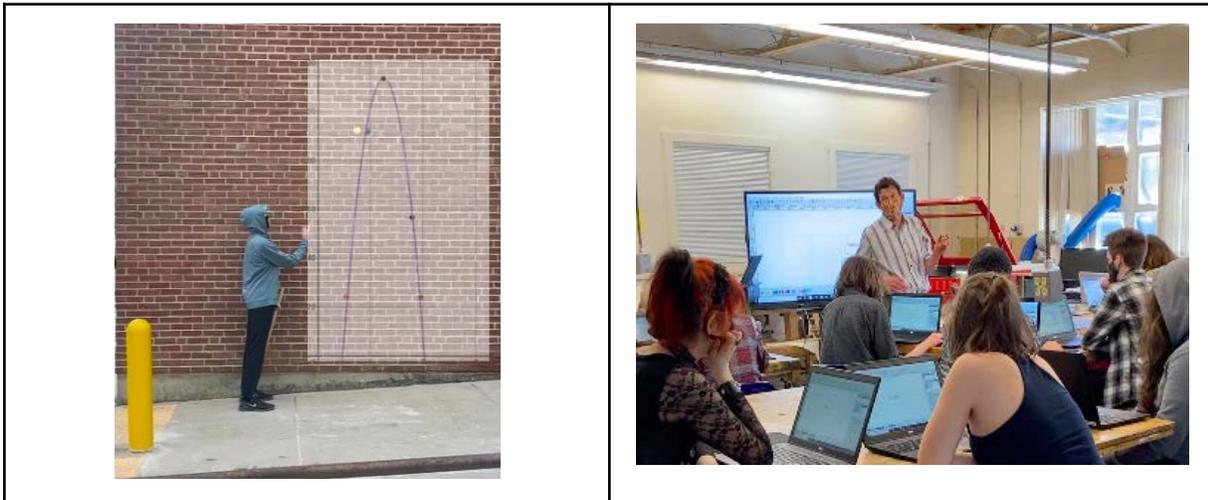
**AGS 2** (Algebra, Geometry & Statistics 2): This second of three course series continues the use of Mathia as a skills support for further development of the integrated content. The content includes algebraic analysis of geometric shapes and relationships, trigonometric relationships and applications, 3-D investigations and comparisons, further development of functions to quadratics with applications to geometric and statistical models, and conditional probabilities.

**AGS 3** (Algebra, Geometry & Statistics 3): This third of our series of integrated courses still employs the Mathia site as the skills support for the content that includes deeper analysis and structure of algebraic patterns and quadratics, comparisons of polynomial equations and models, rational and irrational functions with logarithmic expressions and modeling, further applications of trigonometry, and data interpretations and arguments using these previous tools.



**Precalculus** This course is offered as a prerequisite for those students interested in taking Advanced Placement Calculus and college Calculus. The course finishes the study of functions of two variables: polynomial, exponential, logarithmic, trigonometric and the conic sections. Mathematical reasoning, problem solving, understanding multiple perspectives, and use of graphing calculators will be stressed.

**AP Calculus AB / Calculus (non-AP)** This elective course is equivalent to a first-semester college calculus course. Students will engage in the following behaviors to achieve conceptual understanding: reasoning with definitions and theorems, connecting concepts and representations, implementing processes, building notational fluency, and communication of ideas. As prescribed by the College Board, students will study three main ideas: limits, derivatives, and integrals. The notion of a limit helps us understand the behavior of a graph near a point and serves as the basis for determining continuity. In a hopeful sense, limits are much less about what things *are* and much more about what things *should* be. Derivatives give us the language of covariation: describing the rate of change of one variable in terms of another variable. Applications of derivatives include, but are not limited to, slopes of tangent lines at a point, analyzing graphs, rectilinear motion, Mean Value Theorem, related rates, optimization, and growth and decay. Integrals allow students to use the language of limits to solve problems involving area, volume, rectilinear motion, and accumulation. Students will study the Fundamental Theorem of Calculus as means to translate between the languages of derivatives and integrals. Due to the rigor of the AP curriculum, a non-AP version of calculus will be concurrently offered. Please see the instructor to determine which course placement is most appropriate for you.



**Computer Science Principles** (Elective; not for proficiency in Math Content standards.) In semester 1, students in this course will start by focusing on iOS development tools, basic programming concepts, and industry best practices. Building on this foundation, you'll work through practical exercises, creating apps from scratch, and building the mindset of an app developer. After you finish the course projects, you'll have a chance to build your own personal project, working through design, prototyping, and development phases. Second semester is modeled after AP Computer Science Principles, the course "introduces students to the central ideas of computer science, instilling the ideas and practices of computational thinking, and inviting students to understand how computing changes the world. Students develop innovative computational artifacts using the same creative processes artists, writers, computer scientists, and engineers use to bring ideas to life. This course emphasizes the vital impact advances in computing have on people and society. The course goes beyond the study of machines and systems and gives students the opportunity to investigate computing innovations that span a variety of interests and to examine the ethical implications of these new technologies.

**Robotics:** This course provides an introduction to robotics for students with no programming background using Vex Robotic kits. Using the CCSS math practices, students will learn to construct, control and program these robots through investigative and exploration activities. Research projects will expose the students to the engineering process.

**Math for Everyday Life** Students in this class build their numeracy skills, hone problem-solving strategies, and work with resources geared to, and differentiated for, individual needs. Common Core Math Practice Standards are reinforced throughout this course. Along with increased mathematical competency students will practice their organizational skills, note-taking strategies, personal management skills, productivity, reflection and revision. There are specific focus areas stressed each year, dependant on students strengths and needs, ie: financial literacy, architecture, or foundational skills.

## Flexible Pathways: Math

### VTVLC

- Online classes can be taken to compliment RU standard course offerings, but there may be redundant topics or skills.

### ILOs:

- Talk to your counselor for more information or if you have an idea for an ILO in this area.
- The offerings of the Innovation Center may be well-suited to an ILO in math.

## Future Offerings

*Our offerings shift based on enrollment and need. Sometimes we rotate offerings from one year to another. Potential future offerings include:*

**AP Statistics / Statistics (non-AP)** This elective course is equivalent to a first-semester college statistics course. Students will learn concepts and tools for collecting, analyzing and drawing conclusions from data. Students learn under four broad conceptual themes: 1) Exploring Data: Describing patterns and departures from patterns, 2) Sampling and Experimentation: Planning and conducting a study, 3) Anticipating Patterns: Exploring random phenomena using probability and simulation, and 4) Statistical Inference: Estimating population parameters and testing hypotheses. Due to the rigor of the AP curriculum, a non-AP version of statistics will be concurrently offered. Please see the instructor to determine which course placement is most appropriate for you.

# Science

Somewhere, something incredible is waiting to be known.

-Carl Sagan, astronomer

**Mission:** *The Science department believes that students should draw from a rich variety of experiences with living and physical systems and apply that knowledge to real-world situations. Students should ask questions, seek answers, and evaluate claims based on qualitative and quantitative evidence, and effectively communicate the results. Our mission is to enable students to act as informed citizens and even contribute to the ever-expanding body of scientific work.*

**Typical course sequence:** RU middle school core science NGSS standards start in 6th grade. The 7th grade NGSS course at RU focuses on Energy in Earth Systems, and in 8th grade the focus is on Waves and Biological Systems. In high school, students take at least three core courses, which prepare students for a diversity of pathways through senior year and into college and career - including programs at RTCC, AP courses at RU, and beyond. Our core science courses also prepare students for the Vermont Science Assessment, a standardized test taken in 11th grade. The three core high school courses are:

**Integrated Science I: Earth Science with Chemistry.** : This year-long course serves as an introduction to Earth science with an emphasis on the chemistry of and human impact on the environment. We will examine surface and atmospheric processes including, but not limited to, the relationships between resource extraction, natural hazards, and climate change and human development. We will use hands-on investigations and real world examples to explore these key concepts.

**Integrated Science II: Biology with Chemistry** : This year-long course offers an introduction to the principles of **biology** with emphasis on **biological** chemistry, ecology and homeostasis, cell structure and function, gene expression, and patterns of inheritance. We will be using hands-on labs and real-world examples to explore the key concepts in biology. *Prerequisite: Integrated Science I: Earth Science with Chemistry*

**Integrated Science III: Astronomy with Physics** : This semester-long course considers questions such as , How did the Universe begin? How do stars generate the different elements that make up our world? How did the Earth form, and how does energy from the Sun's core arrive here? This course provides an introduction to the principles of physics through the lens of space. We will be using hands-on investigations to analyze the phenomena of space. (RU students at RTCC also take the semester of Integrated Science III to help ensure coverage of standards and help with their readiness for the 11th grade assessment.)  
*Prerequisite: Integrated Science I: Earth Science with Chemistry*

Science, cont.

The above Science 9 - 11 course sequence amounts to 2.5 years of coursework, leaving a half year more to fulfill minimum requirements (3 years). To compliment the core courses at RU, our offerings also include:

- Introduction to Engineering (semester long)
- Entrepreneurship and Manufacturing (semester long)
- Robotics (semester long)
- Innovation Management (semester long)
- STEM-Y (a semester-long “pre-tech” offering taught at RTCC)
- VTVLC Courses (Vermont Virtual Learning Collaborative online courses)
- ILOs (Independent Learning Opportunities, also called Independent Study)
- RTCC Program Imbedded Standards
- Chemistry (year long, alternating years with AP Environmental Science)
- Physics (year long, one period [not double], alternating years with AP Physics)
- AP Environmental Science (year long, alternating years with Chemistry)
- AP Biology (double-period, year long, alternating years with AP Physics)
- AP Physics (double-period, year long, alternating years with AP Biology)

Our school counselors work with students and families to help navigate the various pathways students can choose to follow as they pursue skills and knowledge in Science at RU. More info on these other courses below:

### **Chemistry**

This course offers a foundation in chemical concepts and focuses on physical chemistry. Students will learn how the atom and its particles determine the nature and properties of compounds that make our world work. This course has a heavy emphasis on science skills including explanations and argumentation, developing and conducting investigations, and reading informational texts. Basic algebra skills will be employed to better understand the content; dimensional analysis is the backbone of most calculations. This course will help students who wish to take AP Physics and AP Biology.

Prerequisite: Planet in Motion and Algebra I or instructor approval

### **AP Biology**

The goal of this course is to help students develop a foundation in college-level biology. Students will engage as scientists in systematically investigating the world around us and building on the understanding of prior scientific work. In addition to appreciating the inherent beauty and elegance of living beings, throughout the course students will make connections between ideas in the course as well as to current societal issues. Daily use of scientific thinking will help students explore concepts in an authentic context while honing key skills. Students will be expected to take the exam in May.

Prerequisites: Proficiency in science standards 1 - 3 or approval from the instructor.

### **AP Physics 1 (Algebra-Based)**

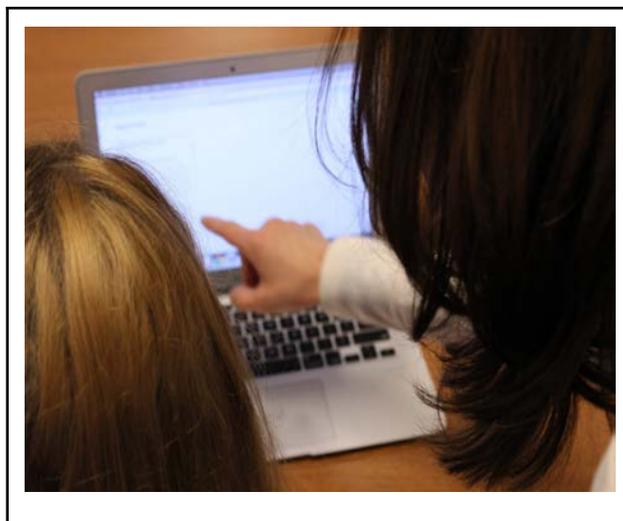
Ever wonder how the world really works? In physics, we don't just learn the rules for the universe – we write them. Using Newtonian mechanics and energy conservation as a guide, students analyze problems as they relate to real-life situations. This includes developing algebraic and trigonometric

equations to describe different situations and using them to predict whether Evel Knievel will jump the Snake River gorge, whether Lindsey Vonn can make the turn, or if Mighty Mouse really can save the day. The College Board has recently revised its AP physics curriculum to emphasize more inquiry and problem-solving, and a deeper understanding of the concepts within. Students will be expected to take the exam in May. Prerequisite: Algebra II and proficiency in science standards 1 - 3 or instructor approval.

### **Environmental Science**

How do living and non-living systems interact to create a self-sustaining planet? What happens when both natural and human-made problems arise? How can we both understand and address issues such as climate change, water quality, air pollution and loss of biodiversity? This course will explore and investigate the interrelationships of the natural world and analyze environmental problems, both natural and human-made. Laboratory investigations and field work will be prevalent in the course, and students will be prepared to take the AP Environmental science test in May.

Prerequisite: Planet in Motion and Bodies of Atoms or Biology



### **Flexible Pathways: Science**

#### **ILOs:**

- Talk to your counselor for more information or if you have an idea for an ILO in this area.
- The offerings of the Innovation Center may be well-suited to an ILO in Science.

#### **CBLs and the IC:**

See above for Community Based Learning classes taught in collaboration with the Innovation Center:

- Entrepreneurship & Manufacturing
- Water Management & Public Policy

**Future Offerings:**

*Our offerings shift based on enrollment and need. Sometimes we rotate offerings from one year to another. Potential future offerings include:*

**AP Environmental Science** (Alternates years with AP Bio)

How do living and non-living systems interact to create a self-sustaining planet? What happens when both natural and human-made problems arise? How can we both understand and address issues such as climate change, water quality, air pollution and loss of biodiversity? This course will explore and investigate the interrelationships of the natural world and analyze environmental problems, both natural and human-made. Laboratory investigations and field work will be prevalent in the course, and students will be prepared to take the AP Environmental science test in May. Prerequisite: Planet in Motion and Bodies of Atoms or Biology

**Introduction to Engineering**

This course is designed to provide an introduction to the science and practice of engineering. Students will investigate materials, structures, engines, machines and linkages, hydraulics/pneumatics and electricity and magnetism; other topics may be explored depending on time and interest. Students will design and construct a series of small and large design projects alone and in small teams. Emphasis will be placed on problem-solving, teamwork and communication skills.

**Physics**

This course offers both hands-on and theoretical approaches to understanding forces, momentum and energy and applying them to everyday situations. Topics covered include kinematics, projectile motion, statics and dynamics, rotational mechanics, pressure and basic electricity. Algebra is used throughout this course as mathematics is the backbone of physics. Students who are interested in technical or science careers are encouraged to take this class. Prerequisite: Algebra I.

**Astronomy/Cosmology**

Space officially begins approximately 60 miles above the Earth's surface. Few humans have ventured beyond this boundary. Yet there is much that we know about this world beyond our World. And far more that we don't yet know. This course provides an overview of what we know, beginning with an orientation of the night sky, exploring the contents of the Solar System, the Milky Way Galaxy and the Universe beyond. The structure and evolution of space-time will be considered as well as recent discoveries that affect our understanding of the forces that affect our Universe.

# World Languages

If you talk to a man in a language he understands, that goes to his head. If you talk to him in his language, that goes to his heart.  
- Nelson Mandela

**Mission:** *In the World Language department, we believe language and communication are at the heart of the human experience. Our society requires individuals to communicate, make comparisons and connections between cultures. The World Language department seeks to advance target language proficiency and cross-cultural competency. Through oral proficiency, we foster curiosity and empathy towards other cultures. By learning the nuances of language, students can understand the multi-faceted dynamics of world cultures and human interactions.*

**Typical course sequence:** State Standards require some familiarity with World Languages. . At RU we require a minimal level of proficiency that typically comes with at least one year of study, achieved in either MS or HS. However, a minimum of two years of high school study is an expectation of most four-year colleges - and many colleges look for three or four years of language. Every level of language class builds upon the previous year's material.

## French I

French I is a beginning level language course designed to develop basic speaking, reading, writing and listening skills. Students will learn vocabulary and grammar, as well as an awareness of the history, geography, culture, and ways of life in various French-speaking countries of the world. Students will strive for novice level (mid or high) listening, writing, speaking and reading skills in French, and will complete assessments to demonstrate proficiency in five standards: language acquisition behaviors, communication, language mechanics, cultural appreciation, and exchange. Students learn to use regular verbs and a few common irregular verbs in the present tense. Students will learn how to ask questions and form negative statements.

## French II

This course reviews and expands on the basic communicative skills taught in French I. Students will strive for Novice-High proficiency in the five world-language standards and be introduced to more complex conversational exchanges and expand vocabulary. Students will progress from memorized words and phrases to "sentence-level" dialogue to "paragraph-level" conversations. Students study personal topics and the descriptions of their environment and relationships, but at a greater depth of vocabulary and grammar. Students learn to use regular verbs and a few irregular verbs in the past tense. Students will use more complex structures to ask questions and express opinions.

## French III

This class is designed to expand upon the material covered in French I and II, as well as begin to use more authentic texts and resources to expose students to a wider variety of topics beyond personal environments and relationships. The grammatical goals of French III move beyond the present and imparfait/passé composé to add the recent past, imperfect, and simple future. Students use reflexive

verbs in a number of tenses and can communicate across tenses. In addition to the new tenses, students will learn more idiomatic expressions and cultural nuances. Through the study of authentic sources, students gain an appreciation for the breadth of cultures, beliefs and customs across the francophone world.



### **Spanish I**

Spanish I is a beginning level language course designed to develop basic speaking, reading, writing and listening skills. Students will focus on building vocabulary and grammar, as well as an awareness of the history, geography, culture, and ways of life in various Spanish-speaking countries of the world. The cultural focus of this class is meant to highlight Spain and Mexico and their cultural heritage. Students' will develop novice level proficiency (mid or high) in listening, writing, speaking and reading skills in Spanish, and will complete assessments to demonstrate proficiency in these areas.

### **Spanish II**

This course reviews and expands on the basic communication skills taught in Spanish I. Students will be introduced to more complex conversational exchanges. They will develop their listening comprehension skills and be encouraged to increase their speaking skills. They will progress from "sentence –level" dialog to "paragraph –level" conversations and will become comfortable reading longer texts for meaning and pleasure. Students will strive for Novice-High proficiency in the five world-language standards. Major Concepts: Review of the present tense, introduction to irregular verbs in the present tense with all spelling change, cultural/linguistic focus on music and food, describe family relationships, talk about activities in progress, order in a restaurant, ask for and pay a bill, talk about things to do in the city, body parts, chores, discuss outdoor activities, and talk about school life. The cultural focus of this class highlights Mexico and Chile and their cultural heritage.

### **Spanish III**

Students in this course will review the grammar principles learned in Spanish I and II and consider new themes not presented there. Reading, writing and conversational skills will be sharpened as we study the history, geography and culture of the twenty Spanish-speaking countries in the world, with a focus on Puerto Rico, Mexico and Spain. Video projects are a major part of this course and oral participation lays at the heart of this class and is a major part of assessments. This is course is given mostly in Spanish.

Major Concepts: Reading an intermediate story in Spanish and be able to speak and write in full sentences describing all aspects of the story. Expressing self in Present, Past, and Simple Future. Talk about oneself, daily routine, physical health and wellbeing.

### Spanish IV

Students will continue developing their ability to communicate in Spanish, incorporating the grammar and vocabulary that they have learned in previous years through thematic cultural units that expand their prior knowledge and address current issues. In addition, students will improve in the area of written communication. They will compose short essays in response to cultural events and issues focusing on Bolivia and Cuba. Readings, films, class discussion and music will facilitate their understanding of the language. The class will also incorporate group activities and accessible technology. At the end of the year students will have deepened their understanding of the language and have a broader knowledge of the culture, art, history and literature of Spanish-speaking countries.

### Spanish V

This course is designed to develop and enhance students' knowledge of the Spanish language through reading, writing, listening, and speaking. In addition, students will improve their cultural knowledge of the Hispanic world by exploring and presenting on art, history, holidays, food, traditions, the impact of technology, and challenges that contemporary global society is facing. The aim of this course is to prepare students that are confident in their ability to communicate in Spanish and to demonstrate curiosity and empathy towards the different cultures that make up the Hispanic world. The cultural focus of this class is meant to highlight various indigenous groups throughout Latin America and Argentina, El Salvador. For this reason, both the teacher and the students will speak almost exclusively in Spanish throughout the year. Students are required to speak Spanish only, abiding the "Palabra de honor". Students will strive for Intermediate - Mid proficiency in the five world-language standards.

#### Flexible Pathways: World Languages

ILOs: Some common Independent Learning Opportunities in this subject area include:

- **Advanced Language:** Students who are interested in studying a language we do not offer in our traditional courses may propose an ILO, or you may propose an ILO if you are interested in going deeper with your study of a Spanish or French during the school year or over the summer.

Talk to your counselor for more information!

### Future Offerings:

*Our offerings shift based on enrollment and need. Sometimes we rotate offerings from one year to another. Potential future offerings include:*

**Advanced French A and B:** The Advanced French A and B class consists of a two-year rotation for French IV and French V students. The class will use the discussion medium to advance language in a variety of topics. Students will interact with authentic materials and creative immersive experiences in the classroom to fine tune simple mechanics, expand vocabulary, and improve linguistic nuance. Students will expand their communicative abilities to include the imperfect/conditional and the subjunctive mood. Students produce writing that reflects their development of complex syntax and the ability to express a number of diverse opinions. Students use authentic materials to interact with francophone cultures and develop an understanding of the wide range of cultural issues in the francophone world.

**Service Learning Abroad, You Belong to the World!** This course supports our world travel program. Students in this course plan, fundraise and learn language to support their travel abroad. Service learning is a component of this work, as are home stays, to ensure that students truly have an opportunity to live in the place they are visiting.

# Fine Arts: Visual Arts, Music, Theater

Every child is an artist. The challenge is to remain an artist after you grow up.

~ Pablo Picasso

*Mission: The arts play an important part in our community, our schools, and in the lives of individuals. Our educational system needs to emphasize the arts and use them as a vehicle for learning and self-expression. Art is way to touch the values and beliefs of the world and communicate the needs of the self or the soul. As former President John F. Kennedy stated, "I see little of more importance to the future of our country and of civilization than full recognition of the place of the artist. If art is to nourish the roots of our culture, society must set the artist free to follow his/her vision wherever it takes him/her." Art at RUHS is place for the child to have a voice, a place of expression for the artist in everyone, especially the students of today. For it is true that art defines us all.*

**Typical course sequence:** Students minimally take one year of fine arts classes in HS, and many students take many more than that! Some courses have prerequisites and others do not. Most classes can be taken in any order or sequence. Please see descriptions below and work with your counselor to put together a pathway that corresponds to your needs and interests.

## Visual Art

### Exploration in Art (Fall Semester)

Do you want to Explore what makes great Art? Through the exploration of the basic *Elements of Art* and *Principles of Design* students will delve into various mediums such as ceramics, acrylic painting, watercolor, collage and more. Aesthetic and creative judgment will be examined with public exhibition as a high point. This is a foundation course which will help the student through further investigation of the Arts. Watch your artistic abilities grow!

### Art for the People, by the People (Spring Semester)

Have you ever wanted to make art that expresses the way you see the world? Come join this class and get the chance to have your voice heard through graffiti, indoor and outdoor installations, and public sculpture! If you are wondering what public art looks like, search Google for these artists: Shepard Fairey, Lady Pink, Banksy, Miss Van, Jean-Michel Basquiat, and Keith Haring. You will learn to plan a visual scheme, understand drawing and sketching, color theory, and a variety of mediums. You will work by yourself and with others to create works that will allow you to make your statement!

### 3D Construction Art

If you like creating art with your hands and traditional tools, this is the course for you. This semester class will investigate and develop various relief and 3D sculpture projects and other large scale pieces,

including the annual Halloween Parade Float. By observing established sculptural forms and different artists styles, the student will develop artwork using diverse media such as clay, plaster, wood, and more. Aesthetic judgment and artistic problem solving become fun challenges when creating projects like oversized Pop Art Food. The class incorporates both smaller individual work as well as group involvement in large projects. Public exhibition of work will be a high point. Come see if you can change a discarded book into a work of art, or work recycled materials into something beautiful and new!

### **Art & Artists (Spring Semester)**

A big question in the 21<sup>st</sup> century is, “What is Art?”. Through the act of examining and creating students will make connections to contemporary and well-known artists. The course will focus on understanding the motivations and concepts that are unique to these artistic innovators. 2D and 3D works will be generated based upon the students’ discoveries!

### **Drawing and Painting (Fall Semester)**

Did you know that anyone can learn to draw and paint beautiful artwork? It all starts here. Have you ever heard yourself say, “I don’t know how to draw”, or “I don’t know how to paint.”? If you feel that way, or even if you feel really comfortable expressing yourself artistically, this is a great course for you. The fundamentals of drawing all the way through creating your own artistic vision will be explored. A variety of mediums, including pencil, pastel, charcoal, watercolor, acrylic and oils will be the focus. Come find your favorite medium and shine!



## **Music**

### **Digital Music** (Semester-long during SY 19-20; may run again as a year-long PBL in future)

Prior to the “desktop revolution,” the ability to create music digitally was out of reach for all but a few successful and wealthy composers. Today, technological tools that were only a dream for most people in the past are now commonplace, and the Internet allows us to share our ideas with the world. This course will focus on understanding how these tools work and how they can be used to compose and share evocative music and meaningful dialogue. This will involve exploring music theory (rhythm,

melody and harmony), basic piano skills, composition, history, engineering, physics, live sound reinforcement, communication, writing, and psychology. While this list of disciplines (particularly the musical ones) may sound daunting, the computer makes most of them accessible even if you are not a skilled performer. **A musical background is not necessary for entrance into this course.**

### **Music Theory** (Semester-long)

A recent landmark study, *Reinvesting in Arts Education*, showed the link between arts education and achievement in other subjects. For instance, it's been proven that music students get higher marks on standardized tests than those who have no music involvement. This semester long course will involve students in the principles of music theory through listening, composition and analysis. Computers and technology will be used to explore a wide range of compositional techniques and self-expression through a "hands-on" classroom approach. Students will also have an opportunity to share and critique their own work and that of other Vermont students. **Past musical learning and experience is an important prerequisite for this class.**

### **Jazz Lab**

Jazz is an open-ended music designed for open minds. This course is intended for capable, self-motivated students who are interested in learning more about jazz and improvisation. We will be a small jazz combo. This ensemble will play regularly here in Randolph and at in-state jazz festivals. We will play from all eras in the jazz tradition and begin to learn the basics of harmony, melodic construction, blues form and swing. There will be listening sessions, improvisation exercises, and solo transcription as part of the course. Playing in the RU Concert Band as well as multiple performances throughout the year are a requirement of the course. **Auditions for this course will be held at the end of the spring semester. Approval from the Music Teacher is required for entrance into this class.**

### **Senior Concert Band** (All instrumentalists 9-12)

Band is for students who enjoy making music with friends! Through participation in various concerts, parades and music festivals, students will improve their ability to perform on their instrument, both alone and with others. They will also learn to listen, analyze, and evaluate performances. Community performance will be an important aspect of the course. Band members will participate in and critique various programs throughout the year at which participation is required and assessed. Students are encouraged to audition for both the Winooski Valley District Music Festival and the All-State Music Festival. 8th graders must participate in Junior Band.

### **Senior Chorus** (All vocalists 9-12)

Chorus is open to all students who like to sing! Proper methods of voice production, listening, expression and musicianship are emphasized. Music from differing periods, composers, styles and cultures will be covered, exposing students to different forms and eras of music. Participants will also learn to read musical notation. Chorus members will participate in and critique various programs throughout the year at which participation is required and assessed. Students are encouraged to audition for both the Winooski Valley District Music Festival and the All-State Music Festival. 8th graders must participate in Junior Choir.

## Theater

RU Theater is an engaged community of adventurous learners - where foundational knowledge from nearly every academic discipline melds with critical thinking, adaptability, collaboration, problem-solving, and resiliency. Courses are semester long, but students are welcome to reenroll. The theater program strives to offer meaningful, challenging opportunities for growth and discovery to a diversity of students.

### **Suitcase Theater** (Middle School)

There's room for some HS students in this hands-on, introductory middle school course rooted in understanding, creating, and performing. "Suitcase Theater" was pioneered in the 1930's by Langston Hughes and Louise Thompson Patterson. Performed in non-traditional spaces and without specific costumes, this theatrical tradition relies upon creativity and imagination to evoke, relate, and connect with an audience. By permission of instructor and student services, seasoned actors and technicians from the high school are welcome to collaborate and mentor as we create, refine, and perform.

### **Staging Reality?**

The stage provides unique opportunities for conversation - where artists, audience, and society can examine, question, challenge, celebrate, and reflect. But does American theater accurately reflect the human experience? Or is it a world of power and privilege rooted in false-narratives? Examining film, scripts, and live performances we'll consider whose stories are told on the American stage - and why. This course is an opportunity for high school students to discuss current issues - as they affect our stage, nation, and world.

### **Technical Theater**

A workshop course rooted in creating, connecting, and supporting the mainstage productions of RU's resident theater company - the Encore Theater Company. Our work is both conceptual and hands-on, as we explore and create a range of elements for upcoming productions. Our work may be centered in creating, adapting, and maintaining scenery, props, furniture, lighting, costumes, and make-up. Technical theater encompasses a diversity of real-world skills, abilities, and aptitudes.

### **Main-Stage Theater Performance and Production** (Advanced)

A course for students who are firmly committed to contributing to the annual mainstage productions through acting, directing, or sound, lighting and set design. Enrollees will generate, conceptualize, organize, and develop artistic ideas - actively collaborating with RUHS, RTCC, and/or OSSD faculty. *Although this course will meet regularly, much of the learning will carry over into the rehearsal period after school. Students who are actively involved in a current production are encouraged to enroll.*

\*

#### **Flexible Pathways: Fine Arts**

PBLs: PBL electives that may meet graduation standards in this subject area include:

- **Digital music performance**

See the PBL offerings section for more information!

ILOs: Some common Independent Learning Opportunities in this subject area include:

- **Creating an Artist Portfolio:** Would you like to get a college degree in gaming art and design? Or would you like to work for a company like Pixar? Or maybe you are interested in studying Fine Art in college? Most colleges and universities require an art student to present a portfolio during the admissions process. An ILO in this area will help you. Students will research the portfolio requirements of leading art schools like RISD (Rhode Island School of Design), Full Sail University, and SCAD (Savannah College of Art and Design). The challenge will be to compile a professional-quality portfolio that communicates and demonstrates fluency in essential arts processes and skills.
- **After-School Music, Theater, Visual Arts:** If you are involved in a structured learning experience in any of these - or other fine arts - areas, you may be able to develop an ILO to support and document the work. An ILO in this area may be done instead of or in addition to a traditional fine arts course.

Talk to your counselor for more information!

## Future Offerings

*Potential future offerings include:*

### **Compositional Development, Visual Art**

What is the secret to a good artistic composition? 3 could be the magic number! This semester course investigates the Rule of Thirds and many more compositional techniques that can improve your art. Students are required to do work outside the classroom, as well as plan and execute independent projects within the framework of the class. What makes a good composition will be creatively problem-solved while working in various mediums; i.e. paint, pen and ink, pastel and more. Students will refine their art into successful compositions and conveying artistic intent through revision and reflection. This class is recommended for students who have taken art foundation classes. Come learn the tricks of the trade!

# Practical Arts

Intelligence and skill can only function at the peak of their capacity when the body is healthy and strong.

- John F. Kennedy

*Mission: The Mission of the Practical Arts Department is to supply students with the resources to prepare them to make healthy, informed choices for their present and future.*

## Physical Education

### **My Physical Best I** (Semester Long)

Learn the skills necessary to develop lifelong fitness. Team sports and individual fitness activities are used as a vehicle for introducing strategies for assessing personal fitness levels, goal-setting, and building a foundation for understanding the health and skill-related components of physical fitness. My Physical Best I provides an experience through which all students recognize the value of physical activity for health, enjoyment, challenge, self-expression and/or social interaction.

### **My Physical Best II** (Semester Long)

Deepen your understanding of the health and skill-related components of physical fitness through an array of team sports and individual-performance activities. It is strongly recommended that all students complete My Physical Best I (MPB1) prior to this course. A basic understanding of the principles of training, target heart rates, and the FITT formula as they apply to personal fitness levels will be essential for your success. The concept of wellness and the importance of striving for optimal levels of health are the cornerstones of this course and are exemplified by a capstone project where students develop and maintaining a personal fitness portfolio.

### **Unified Physical Education** (Semester Long)

This course is designed to advocate for the physical education and socialization of our diverse school community. Students will engage in the education of our diverse student population through class experiences and exposure to text, film, and guest speakers throughout the semester. They will identify specific movement and social goals for one another, and build a tolerance for different strengths and weaknesses. As the semester progresses, students will be instrumental in the planning and instruction of classes. It is their responsibility to assist and participate in the daily movement activity and games. The primary goals of this course are to create awareness, acceptance, physical movement skills.

## Flexible Pathways: Physical Education

PBLs: PBL electives that may meet graduation standards in this subject area include:

- **Movement Exploration**

See the PBL offerings section for more information!

ILOs: Some common Independent Learning Opportunities in this subject area include:

- **Athletics/PE ILO:** Students who are engaged in a rigorously athletic program at RU or outside of school, are invited to develop an ILO to meet Physical Education standards.
- **Independent Learning Opportunity in PE:** The PE ILO is a full semester independent course for students to pursue an interest in physical education that may not be offered in a traditional PE class. Students will work independently on a personal fitness plan and record their progress through weekly journal entries. Students will also be required to research and review eight articles related to their program over the semester. The journaling and article reviews should address the National and VT State Standards in Physical Education as well as personal insights and experiences gained in the process. Because this is independent work, it is incumbent upon the students to be responsible for meeting deadlines and requirements each week. Unless agreed upon in advance, a PE ILO is offered as pass/fail. The goal is to develop physically literate individuals who have the knowledge, skills and confidence to enjoy a lifetime of health and physical activity.

Talk to your counselor for more information!

## Health

### Health Education (semester-long)

RU Health Education is designed to assist students in developing life skills to maintain and improve their health, prevent disease, and reduce health-related risk behaviors. The course allows students to acquire and demonstrate health-related knowledge, skills, and practices. The course is required for one semester. Topics of instruction include: Adolescent Brain Development, Personality/Psychology, Behavior Modification/Change, Stress Management, Depression/Suicide Prevention, Loss/Grieving, Chemical Addiction, Media Literacy, Human Sexuality/Relationships. The “Reality Works” baby project is a requirement for completion of the course. Historically, students have taken this class in 10th grade, but this semester-long class is open to students in any high school grade.

## Driver Education

### Driver Education

The Driver Education program at RU is based on basic driving systems. The focus is to assist students in becoming low-risk motor vehicle operators. Emphasis is placed on responsibility in every aspect of their participation in this course. Students will have to demonstrate that they possess the maturity responsibility, and skill potential for operator license possession. The Driver Education department at RU recognizes that thirty hours of classroom and six hours of behind the wheel instruction cannot produce a skilled driver without parental assistance and support. The number one killer of youth ages 15-20 is traffic crashes. Parents, students, and teachers, working together, can be much more successful at turning this statistic around. Prerequisites: A student must have his/her permit prior to the first day of

class and a copy of the permit must be given to Student Services one month prior to the first day of the class. Students must sign up for Driver's Education by June 1st for the upcoming fall semester and by December 1st for the upcoming spring semester. There is limited space in Driver's Education classes. Registration will only be permitted if there are open seats. Seniors will be given preference only if registering, and having their permit, prior to the deadlines noted above. Prior to the deadline, non-seniors will be registered based on date of procurement of permit, not by date of sign up for the course. Any open seats after the registration deadlines will be available for those with a permit on a first come, first served basis.

# ***Randolph Technical and Career Center***

**Note:** For the most up-to-date description of RTCC offerings, visit:

<https://orangesouthwest.org/rtcc>

**Mission:** The Randolph Technical Career Center is committed to providing students with a challenging academic and technical education in a supportive, engaging, and respectful environment.

## **Randolph Technical Career Center Profile**

RTCC students come from the seven regional communities of Bethel, Chelsea, Northfield, Randolph, Rochester, South Royalton, and Williamstown, to form a unique school and student body. All day technical program offerings give students the opportunity to take advantage of many leadership and community-based activities including work experiences and community service projects throughout the region. Comprehensive RTCC programs combine applied academic skills with technical education competencies that promote lifelong learning for students.

Students have the opportunity to earn industry recognized certificates, earn dual enrollment credits, earn scholarships to college, and participate in work-based learning to earn experience in their programs.

## **Planning a Technical Program**

Students may choose a program in which to participate at the Randolph Technical Career Center. The programs are available to all students who have obtained junior or senior status at their high school. Prior to attending RTCC, students are expected to have completed most of their graduation requirements.

## **Admission Process**

Students should meet with their School Counselor after determining general career interest areas. The School Counselor will provide the student with an application for the student and their parents to complete. The School Counselor will forward this application, along with a student's transcript, to RTCC for consideration.

## **Entrance Requirements**

Those students attending RTCC will fulfill graduation requirements for the Senior Project by completing the RTCC Project. The Technical Center will make companion courses at RUHS available to students enrolled in a technical program. Any exceptions to the above requirements must be reviewed by the student's counselor and the RUHS Director of Student Services. The admission procedure would include a formal application submitted for review by the RTCC Admission Committee. All students are required to take English. Some students may also be required to complete their remainder Academic Requirements at Randolph Union High School. .

See next page for more on specific requirements for Seniors and Juniors.

**Requirements for joining RTCC as a Senior:**

Students must have successfully completed the following courses prior to the senior year.

English	3	full years
Math	3	full years
Science	3	full years
Social Studies	2	full years
US History	1	full year
P.E.	1.5	years
Health	.5	years
Fine Arts	1	full year

If admitted to RTCC as a junior, companion courses will be taken to meet senior year requirements while enrolled in the center.

**Requirements for joining RTCC as a Junior:**

Students must have successfully completed the following courses prior to the junior year:

English	2	full years
Math	2	full years
Science	2	full years
Social Studies	2	full years
P.E.	1.5	years
Health	.5	years

**Junior/Senior English**

Junior or Senior English-is integrated into each program’s curriculum. Students develop reading, writing, critical thinking, and organizational skills while studying material that is directly related to the student’s program and are interesting and useful to them in program class. Program teachers plan closely with the English teacher to make sure students are successful and the subject matter is relevant.

**Technical Project: Portfolio**

All RTCC students are required to present a Technical Project as part of their graduation from the center. The Technical Project is a digital portfolio project aimed at charting a pathway after high school, documenting student learning and creating a network of professional industry connections. The project is aligned with the student’s technical program. Students will present their portfolio to the public during the RTCC Open House and they will present to their program Advisory Board.

### **Work Based Learning: “Co-op”**

“Co-op” is a program available to all students depending on performance in their technical program, availability of suitable work experiences, individual need, completion of resume, cover letter, interview, and at minimum two job shadows . Four primary types of experience are available to students including: Job Shadows, Unpaid Training, Paid Work Experience, and Apprenticeship. Work schedules are individually designed and can occur during the school day and/ or after school. The purpose of “Co-op” is to enhance a student’s performance in skills learned through their technical program and to give students an opportunity to learn new skills in a “real world” setting. Supervisor evaluations are the basis for grades that are factored into program grades.

### **Extended Learning Opportunities**

All students at RTCC have the opportunity to earn Industry Recognized Certificates which can place them ahead in the competitive job market. Students can enroll in Dual Enrollment courses and or through the Fast Forward program and earn college credit in everyone of our programs. Each program offers through a variety of partnerships or agreements opportunities to extend the students learning and create a portfolio of mastery to demonstrate learning as well as show potential colleges or employers.

## **Business Core Programs**

### **Business Management**

Students prepare for a two or four year college program in accounting, advertising, retailing, marketing, merchandising, or business management. Those who expect to immediately enter the business world prepare for entry-level jobs in banking, customer services, or retail operations. All students study accounting, computer applications, management, and marketing, while exploring future options through college and business visits. Students prepare a professional business plan for their own business, and may receive college credit upon completion of their accounting and/or computer applications work. Students also create, market, and operate classroom micro businesses, with profits shared among participants. During the second semester, students may choose to participate in a work-study program or take a college course. Leadership opportunities and scholarships are available through the local, state, and national DECA organization.

### **Digital Filmmaking / Media Arts**

The Digital Filmmaking /Media Arts program exposes students to a wide range of creative digital and media arts projects. The Digital Filmmaking and Media Arts program is not your typical classroom program. Our program is a fast paced and "hands on" program environment where students learn by collaborating in and outside the classroom and always at their own pace. This is the place where technology, skills and arts converge and where students get to explore their personal ideas and dreams. Over the course of a year students learn a variety of media, including graphic design, illustration, photography, animation, multimedia journalism and filmmaking. Graduates of the program are prepared to take immediate entry-level positions in variety of businesses ranging from advertising and design companies to TV stations to film production companies; or enter a two- or four-year college program with the necessary technology skills, computer program knowledge, and confidence to conquer the next phase of their lives.

## **Mechanical Core Programs**

### **Advanced Manufacturing**

The Advanced Manufacturing program provides foundational skills and knowledge coupled with co-operative work experience, job shadow opportunities, and college exploration. This program enables students to gain the necessary background to obtain entry-level employment in these fields and/or pursue post-secondary education. The program employs a STEM curriculum to teach fundamentals of Science, Technology, Engineering and Mathematics. The STEM lab will employ teams working on solving problems defined by the curriculum or identified by the team on a collaborative project to fostering imaginative and critical thinking. Manual and CNC machining activities will work in conjunction with lesson plans and study material to produce parts for practice, projects or certifications. NIMS machining certifications will be blended into assignments for students looking to continue on to Manufacturing Engineering Technology at Vermont Technical College or a similar program.

SolidWorks, an industrial strength CAD program, is used to give students hands-on experience designing parts to fabricate either through traditional Subtractive Manufacturing and CNC machines, or Additive Manufacturing via 3D printers. TIG welding and fabrication will be offered and used during the fabrication of parts and assemblies used in projects and lessons. Certifications for TIG welding are also available through the American Welding Society.

### **Automotive Technology**

The Automotive Technology program is designed to give students the opportunity to learn about the automotive field. Throughout the learning process, they will be able to practice and demonstrate their learning during hands-on activities. The program's curriculum reflects the Vermont Auto Dealers' Association standards and Vermont's Framework of Standards. Students who participate in this program will be given the chance to gain entry-level experience, receive specialization in a field through cooperative education experiences, and earn their state inspection certificate

### **Construction Trades Management**

The Construction Trades Management program is designed to give students a combination of theory and practical application and real-life learning experience. Students will participate in a variety of off-campus projects that include several phases of construction work. These projects include carpentry, masonry, electrical, and plumbing. In addition to this, students are introduced to regional contractors and manufacturers and have apprenticeship opportunities.

### **Diesel Technology**

The Diesel Technology program provides students with the opportunity to learn about Diesel Technology and demonstrate that knowledge through a variety of projects and written assignments. Students have the opportunity to work with customers, suppliers, and other professionals. The program culminates with an intensive, individualized project that tests students' knowledge.

### **Environmental Resource Management**

The Environmental Resource Management program is designed to expose students to natural science related skills and careers. Classroom study will include theory of environmental systems, GIS mapping, land use, water and soil systems, forest management, forestry practices including the safe and effective use of power and hand tools, equipment and apparatus. The program provides focused field labs and

project-oriented activities. Within each area of study, career objectives and business applications will be explored through field trips to businesses, guest speakers, and applied demonstrations and projects.

### **Diversified Agriculture**

This program provides students with the skills and knowledge necessary in pursuing careers and college studies related to today's diversified agricultural business. Graduates of this program become valuable assets as inventive problem solvers to small and large farms and related businesses in the fast growing agricultural economy. Renewable energy production, local food production, farm business management, mechanical and electrical systems as well as welding and fabrication are just some of the topics explored. Throughout the program, students will utilize scientific and project-based methods to gain insight into the solutions for pressing local and global environmental concerns.

## **Service Core Programs**

### **Education Services**

The Education Services program is designed to provide students with basic skills and competencies needed to continue their education toward a career in education or to be fully prepared for an entry level position in the Human Services or Education field. Components of the program include effective instruction, activity and lesson planning, health and wellness throughout the life cycle, human growth and development, career exploration, leadership training and skills needed for career and college success.

### **Dental Assisting**

The Dental Assisting program prepares students for entry-level employment, further training, and/or post-secondary education in the dental field. With a national workforce over 300,000 strong, a career in dental assisting ranks as the fourth fastest growing occupation in healthcare. To meet our nation's expanding medical demands, recent studies indicate that over 400,000 assistants will be employed by 2021. The RTCC Dental Assisting program prepares students to provide patient care, conduct dental x-rays, prepare patients and equipment for dental procedures, and discharge office administrative functions under the supervision of dentists and dental hygienists. The Dental Assisting program includes instruction in medical recordkeeping, general office duties, reception and patient intake, scheduling, equipment maintenance and sterilization, basic radiography, oral photography, pre- and post-operative patient care and instruction, chairside assisting, performing tooth and mouth impressions, and professional supervision. Students have the opportunity to practice their dental assisting skills in our school-based lab and at local dental practices. Professional Skills developed by business and industry leaders across Vermont are integrated throughout the program. Dental Assisting students develop leadership, social, civic, and career skills through participation in Career and Technical Student Organizations.

### **Health Careers**

Health Careers is a program of study that affords students the time and opportunity to explore and examine varied careers within the healthcare industry. The program provides the information students need in order to make an informed decision regarding a health care path they wish to follow and includes coursework on such topics as anatomy and physiology, first aid and advanced life support, patient care and communication, medical terminology and the safe, competent development and delivery of fundamental care competencies.

**Culinary Arts**

Students participate in an award-winning and active program of coursework and food preparation in a well-organized production kitchen. Students have the opportunity to be engaged in all aspects of the field including: planning and cost estimating, purchasing, and preparation of an incredibly wide variety of menu items. Students who complete the program are well prepared to enter two or four-year college programs or full-time employment including apprenticeships.

**Criminal Justice**

The Criminal Justice program introduces students to a broad range of career opportunities in the Criminal Justice and Public Safety/Emergency Management fields. It also aims to expose students to the latest available laws and technologies for these fields where applicable. This program assists students with making informed life decisions regarding their behavior, which might inhibit a future career in one of these careers.

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