COMMUNITY-BASED LEARNING

Community-based learning incorporates real-world experiences to enhance students’ academic and personal explorations. In the Rubenstein School, a large portion of our community-based learning opportunities for students comes in the form of service-learning courses. Service-learning is a teaching pedagogy that combines service in the community with classroom instruction, with a focus on personal reflection and the development of civic and personal responsibility. Students in service-learning courses build knowledge in their fields while developing transferable professional skills. Internships are another form of community-based learning.

“MY EXPERIENCE WORKING WITH COMMUNITY PARTNERS ALLOWED ME TO MAKE TANGIBLE CONNECTIONS BETWEEN MY ACADEMIC LEARNING, MY COMMUNITY, AND THE WORK I HOPE TO DO IN THE FUTURE.”
NINA GAGE, Student, Environmental Studies

RUBENSTEIN SCHOOL SERVICE-LEARNING COURSES AND INTERNSHIPS PARTNERS

NON-PROFIT ORGANIZATIONS
- Burlington Forest Preschool
- Common Roots
- Crow’s Path
- ECHO Lake Aquarium and Science Center
- Green Mountain Club
- Intervale Conservation Nursery
- Lake Champlain Basin Program
- Lake Champlain Community Sailing Center
- National Wildlife Federation
- Shelburne Farms
- The Nature Conservancy
- Vermont Center for Ecostudies
- Vermont Land Trust
- Vermont Public Interest Research Group (VPIRG)
- Waterkeeper Alliance
- World Wildlife Fund

COMPANIES/BUSINESSES
- Bear Creek Environmental
- Bread & Butter Farm
- Digital Globe
- Hilton Hotel, Burlington
- Princeton Hydro
- Powe. Snowboards
- Watershed Consulting Associates

UNIVERSITY OF VERMONT AFFILIATES & ORGANIZATIONS
- UVM Research Forests
- Lake Champlain Sea Grant
- Gund Institute for Environment
- Rubenstein Ecosystem Science Lab
- Spatial Analysis Lab
- UVM Ropes Course
- UVM Watershed Educators
- UVM Office of Sustainability

GOVERNMENTAL ORGANIZATIONS & STATE/FEDERAL AGENCIES
- Agency of Natural Resources - Vermont
- Department of Environmental Conservation
- Department of Forests, Parks & Recreation
- Fish & Wildlife Department
- Urban & Community Forestry Program
- Association of Vermont Conservation Commissions
- City of Burlington Public Works
- City of South Burlington
- Green Mountain National Forest
- Village of Essex Junction
- U.S. Fish & Wildlife Service
- U.S. Forest Service
- U.S. Geological Survey
- Williston Conservation Commission
- Winooski Valley Park District

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SAMPLE INTERNSHIPS

Internships are an important part of building relevant career experience and an opportunity to work with professionals in fields of interest. Additionally, Rubenstein School students are able to earn internship credit that can count towards their major.

“THE TIME I SPENT AS A FIELD INTERN WITH THE DEERFIELD WIND BLACK BEAR STUDY HAS REWARDED ME WITH INVALUABLE SKILLS THAT COULD NEVER BE ACQUIRED SOLELY IN THE CLASSROOM. EVERY MOMENT OF THIS SUMMER WAS AN EXCEPTIONAL LEARNING EXPERIENCE AND I AM EXTREMELY THANKFUL TO HAVE HAD THIS AMAZING HANDS-ON OPPORTUNITY.”
DYLAN DEPALMA, Vermont Fish & Wildlife, Deerfield Wind Black Bear Study

“I LEARNED A TREMENDOUS AMOUNT AT MY INTERNSHIP WITH VHB, NOT ONLY ABOUT ENVIRONMENTAL SCIENCE BUT ALSO ABOUT THE WORKPLACE. RUBENSTEIN AIDED ME THROUGH THE APPLICATION, ACCEPTANCE, AND WAS THERE TO PREPARE ME AND ANSWER ANY QUESTIONS I HAD. THIS WAS AN EXPERIENCE THAT ENHANCED MY SUMMER AND WILL AFFECT MY CAREER FOR THE BETTER.”
LILY ZANTA, VHB Environmental Consulting

“I HAD ONE OF THE MOST IMPACTFUL AND DIVERSE SUMMERS WORKING FOR THE NATURE CONSERVANCY. I GAINED SO MUCH EXPERIENCE, KNOWLEDGE, AND UNDERSTANDING THAT GOES BEYOND CLASSROOM LEARNING. I WOULD HIGHLY RECOMMEND A PERENNIAL INTERNSHIP TO ANYONE WHO IS INTERESTED IN A CAREER IN THE ENVIRONMENT.”
OLIVIA LIU, The Nature Conservancy Internship

ENVIRONMENTAL SCIENCES
ENVIRONMENTAL TECHNICIAN
Vanasse, Hangen, Brustlin, Inc.
South Burlington, VT
Assist with delineation of wetlands, collect geographic data, and conduct stormwater system inspections as part of an environmental consulting and civil engineering firm team.

ENVIRONMENTAL STUDIES
TRAIL CREW MEMBER
Chugach National Forest, Cordova, AK
Construct and maintain cabin and trails in a recreation area, perform stream surveys and stream bank restoration, and monitor and maintain waterfowl nesting area.

FORESTRY
FORESTY ASSISTANT
Piedmont National Wildlife Refuge
Hillsboro, GA
Establish permanent tree survey sites to assess the abundance, size, and health of tree and plant species. Collect and enter data to track forest health and ecosystem changes over time.

NATURAL RESOURCES
STEWARDSHIP ASSISTANT
Pine Butte Swamp Preserve
The Nature Conservancy, Chateau, MT
Assist with and monitor control of noxious weeds on the preserve, maintain fences and trails, converse with visitors, and collect data on prairie restoration and forest management.

SUSTAINABLE PARKS, RECREATION & TOURISM
SPORTS MARKETING INTERN
Fuse Marketing, Winooski, VT
Assist with event management and general marketing for a world-wide marketing company that connects products to youth in multiple sports, with an emphasis on snow sports. Intern on location at resorts and other locations.

WILDLIFE & FISHERIES BIOLOGY
WOLF CONSERVATION INTERN
Wolf Conservation Center
South Salem, NY
Care for and feed wolves. Assist with education programs, tours, and maintenance of facility. Plan special events including a Walk for Wolves.
**UNDERGRADUATE DEGREES**

The Bachelor of Science degree in the Rubenstein School of Environment and Natural Resources includes four kinds of requirements: core, general education, major and University.

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**CORE CURRICULUM**

The core curriculum incorporates knowledge, skills, and values that are central to the study of natural resources and the environment.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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</thead>
<tbody>
<tr>
<td>NR 1</td>
<td>Natural History and Human Ecology 1</td>
</tr>
<tr>
<td>NR 2</td>
<td>Natural History and Human Ecology 2</td>
</tr>
<tr>
<td>NR 6</td>
<td>Race and Culture in Natural Resources</td>
</tr>
<tr>
<td>NR 103</td>
<td>Ecology, Ecosystems and Environment</td>
</tr>
<tr>
<td>NR 104</td>
<td>Social Processes and the Environment</td>
</tr>
<tr>
<td>NR 205</td>
<td>Ecosystem Management: Integrating Science, Society and Policy</td>
</tr>
<tr>
<td>NR 206</td>
<td>Environmental Problem Solving and Impact Assessment</td>
</tr>
<tr>
<td>NR 207</td>
<td>Power, Privilege and Environment</td>
</tr>
</tbody>
</table>

**GENERAL EDUCATION REQUIREMENTS**

The Rubenstein School general education requirements provide students with experience fundamental to their personal and professional lives. They are designed to enhance the student’s ability to assimilate and analyze information, to think and communicate clearly, and to respect multiple perspectives. These requirements are flexible and encourage creativity in meeting educational goals.

**COURSES IN REQUIRED AREAS**

<table>
<thead>
<tr>
<th>Category</th>
<th>Requirement</th>
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</thead>
<tbody>
<tr>
<td>Writing</td>
<td>ENGS 1 or HCOL 85</td>
</tr>
<tr>
<td>Speaking</td>
<td>NR 21, SPCH 11, or CALS 183</td>
</tr>
<tr>
<td>Race &amp; Culture</td>
<td>NR 6, NR 207 and 3 credits from approved diversity courses</td>
</tr>
<tr>
<td>Mathematics</td>
<td>MATH 9 or higher (not MATH 17)</td>
</tr>
<tr>
<td>Statistics</td>
<td>NR 140, STAT 111, STAT 141, or STAT 211</td>
</tr>
</tbody>
</table>

**MAJOR REQUIREMENTS**

Additional course work is required for each specific major. The Rubenstein School awards the Bachelor of Science degree in six disciplines:

- Environmental Sciences
- Environmental Studies
- Forestry
- Natural Resources
- Sustainable Parks, Recreation and Tourism
- Wildlife and Fisheries Biology

**UNIVERSITY REQUIREMENTS**

All students must complete the University Diversity Requirement, Foundational Writing and Information Literacy Requirement, Sustainability Requirement, and Quantitative Reasoning Requirement which may be fulfilled with School and General Education requirements.

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“NR 206 [THE RUBENSTEIN SCHOOL CAPSTONE COURSE] GAVE ME A CHANCE TO THINK ABOUT WHAT HAS INFLUENCED MY PAST, WHAT HAS DRIVEN ME TO BE PASSIONATE ABOUT WHAT I AM PASSIONATE ABOUT, AND WHAT IS IN STORE FOR MY FUTURE. SPECIFICALLY, THIS COURSE BUILT ON SOME BROADER INSIGHTS AND SKILLS THAT I KNOW WILL AID ME IN BOTH MY CAREER AND IN MY PERSONAL LIFE.”

RHIANNA SOMMERS, Student, Environmental Sciences
The interdisciplinary Environmental Sciences major combines a natural science-based core curriculum with hands-on experience needed to identify, analyze, and solve environmental problems arising from human disturbance. Blending hands-on field and laboratory instruction with real-world environmental internships, research, and study abroad opportunities, students acquire the skill set needed to tackle complex environmental problems. With the School’s emphasis on such cutting-edge areas as ecological design, restoration of damaged ecosystems, and environmental risk assessment, Environmental Sciences graduates are equipped with the latest tools to protect our forests, waters, and landscapes.

**ENVIRONMENTAL STUDIES**

Founded in 1972, the campus-wide Environmental Program hosts the fourth largest major on the UVM campus and is known nationally for its interdisciplinary approach. The Environmental Studies major encourages community engagement through local and international internships and through service-learning coursework in Vermont’s landscape, government, and nonprofit organizations. The program promotes environmental education at all levels as well as artistic expression of environmental values, and actively supports student advocacy and political awareness. The curriculum is taught by faculty in such varied pursuits as environmental law and policy, restoration ecology, and eco-media studies. The community is a lively hub of activity, taking up local and global issues with passion and rigor.

**FORESTRY**

The Forestry major trains students to meet the needs of the 21st century, which includes managing forests for resilience, adaptation, and climate mitigation. Based on a Society of American Foresters Accredited curriculum, students learn how to tackle the ever-increasing demands and pressures placed on the world’s forests while sustaining the many services forest ecosystems provide. The program attracts students who want a career working outdoors, excel at math and science, learn by doing, and can embrace both the fundamentals of traditional forestry and emerging perspectives in the field. The Forestry major provides students with an education in ecologically responsible forestry, emphasizing hands-on field, intern, and research experiences in the complex landscapes of the northeastern U.S., while also stressing global context and change.

**NATURAL RESOURCES**

The Natural Resources curriculum combines course work from disciplines inside and outside the Rubenstein School to produce an individualized major focused on an ecological theme or the human-environment relationship. Students concentrate in Resource Ecology, Resource Planning, or Integrated Natural Resources. They take foundational courses in natural or social sciences and then tap into upper-level and field-based courses to focus in areas such as aquatic ecology; terrestrial ecology; environmental policy, economics and law; community-based resource planning; environmental education; sustainability and resource management; and energy and environmental systems. Most students incorporate internship, research, and/or study abroad experiences into their academic program. Graduates are competitive for positions in the environmental field in a range of settings. They also are prepared to pursue graduate studies in environment and natural resources including advanced study in the natural sciences and in law; urban, regional and community planning; and public administration.

**SUSTAINABLE PARKS, RECREATION AND TOURISM**

The Sustainable Parks, Recreation and Tourism Program provides outstanding learning opportunities for students interested in tourism management, leisure behavior, parks planning and management, community recreation and sports planning, and environmental education. With Vermont as our learning laboratory, the program prepares students to become leaders in innovative sustainable practices in these fields. Students gain knowledge in how to design and deliver high-quality recreation and tourism programs and services that enrich people’s lives, create livable communities, and preserve and protect natural and cultural environments. Courses feature experiential learning in resort management, marketing, leisure behavior, environmental interpretation, ecotourism, parks and recreation planning, and site design. All students in the program complete an internship to obtain valuable work and learning experiences that lead to employment in professional positions after graduation.

**WILDLIFE AND FISHERIES BIOLOGY**

The Wildlife and Fisheries Biology major focuses on the ecology, management, and conservation of animal species and populations. The curriculum emphasizes the application of science to address real-world issues and problems related to species, including habitat loss, fragmentation, and degradation; over-harvesting; disease; invasive species; and climate change. Courses emphasize applied ecology, techniques for species management/conservation, and hands-on experiences in labs and field trips. Students in the major concentrate in either Wildlife Biology or Fisheries Biology.
The Rubenstein School targets high impact research opportunities to sustain the human/environment bond and promote thriving life worldwide. Faculty and students focus on complex challenges in such areas as:

- Freshwater ecosystems
- Ecosystem services
- Renewable energy practice and policy
- Sustainable forestry
- Global environmental resource equity
- Conservation of wildlife biodiversity

**OUR VERMONT LABORATORY**
Students and faculty work together in Vermont ecosystems and communities, including:

- Lake Champlain on our 45-foot research vessel Melosira
- Jericho Research Forest and three other experimental forests
- Ten UVM Natural Areas, including the top of Mt. Mansfield
- City of Burlington and the Intervale Center, a 360-acre campus of farmland, trails, and open space along the Winooski River

**RESEARCH PROJECTS**
Students have the opportunity to join research projects sponsored by faculty.

**RESEARCH TOPICS INCLUDE:**

- Ecological and social impacts of climate change
- Species restoration and management of invasives
- Urban stormwater management
- Human impacts on lake systems
- Using geospatial technologies for monitoring and conservation
- Ecological design and green buildings
- Sustainability curriculum development
- Greenhouse gas emissions on farm fields in Vermont
- Lake Trout restoration and spawning behavior in Lake Champlain
- Impacts of winter ticks and climate change on moose population health
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There are many opportunities for students to gain international experiences. Students can take travel courses for credit during winter and spring breaks and during the summer, or study abroad for a full semester. An experience abroad can enhance any program of study in the Rubenstein School, and often courses taken can count towards requirements for a major or minor. Students find their experiences abroad to be transformative and rewarding.

STUDY ABROAD

CHALLENGES OF SUSTAINABILITY IN COSTA RICA

The Rubenstein School’s semester study abroad experience in Costa Rica is comprised of seventeen credits that integrate academic content across the biological and social sciences with the real world challenges and opportunities faced by a rapidly developing Latin American country with unparalleled biodiversity.

Students enrolled in the Costa Rica Study Abroad can receive credit for two Rubenstein School Core Curriculum courses which will count directly for their academic program. The remainder of the Costa Rica courses will serve as electives that could potentially count for concentration courses with advisor/ specific program approval.

COURSE TITLES INCLUDE:

- Foundations of Sustainability – The Costa Rican Experience
- Rural Livelihoods in a Globalized World
- Tropical Forest Ecology in Costa Rica
- Managing for Sustainability
- Community Engagement for Sustainability

RUBENSTEIN SCHOOL SHORT TERM TRAVEL STUDY PROGRAMS

Rubenstein School faculty also offer various travel study programs during winter and spring break as well as during the summer semesters.

PAST TRAVEL STUDY COURSES INCLUDE:

- Bahamas: Place-based Ecological Design
- Denmark: Transitions in Sustainability
- Netherlands: Water Management and Sustainability
- Florida Ecology Field Trip
- Texas Wildlife Field Trip

EXCHANGE AND EXTERNAL STUDY ABROAD PROGRAMS

Students can also participate in summer and semester experiences.

PROGRAM EXAMPLES:

- Arava Institute for Environmental Studies
- EcoQuest New Zealand
- Round River Conservation Studies
- SEA Semester
- School for International Training
- School for Field Studies
- University of Aberdeen, Scotland
- University of Lapland, Finland
- University of Western Australia at Perth

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