School of the Environment 2024–2025

BULLETIN OF YALE UNIVERSITY

Series 120 Number 12 August 20, 2024

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203.432.5100	General School Number

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Contents

CALENDAR

The following dates are subject to change as the university makes decisions regarding the 2024–2025 academic year. Changes will be posted online on the School of the Environment's website.

FALL 2024

Aug. 5–7	M–W	Optional three-day skill-development workshops for incoming students
Aug. 9	F	International orientation
Aug. 12–15	M–TH	Orientation events and MODs for all incoming students
Aug. 19	M	Fall 2024 course registration opens
Aug. 19–22	M–TH	Orientation events and MODs for all incoming students
Aug. 26	M	Orientation for all incoming students
Aug. 27	T	Dean's Welcome Fall 2024 course registration closes YSE Community Day for all YSE students
Aug. 28	W	Fall term classes begin
Sept. 2	M	Labor Day; offices closed; classes do not meet
Sept. 10	T	Last day to add a fall-term class
Oct. 15	T	October recess begins, 7:30 p.m.
Oct. 21	M	Classes resume, 8:20 a.m.
Oct. 25	F	Midterm Last day to drop a course without penalty
Nov. 22	F	November recess begins, 7:30 p.m.
Dec. 2	M	Classes resume, 8:20 a.m.
Dec. 6	F	Classes end; reading period begins, 5:30 p.m. Last day to withdraw from a class with penalty, 5 p.m.
Dec. 12–18	TH–W	Final examinations
Dec. 18	W	Fall term ends; winter recess begins 5 p.m.

SPRING 2025

Jan. 2	TH	Fall-term grades due
Jan. 6	M	Spring 2025 registration opens, 8 a.m.
Jan. 12	SU	Spring 2025 registration closes 11:59 p.m.
Jan. 13	M	Spring-term classes begin, 8:20 a.m.
Jan. 20	M	Martin Luther King Jr. Day; offices closed; classes do not meet
Jan. 30	TH	Last Day to add a spring-term class
Mar. 7	F	Midterm Last day to drop a course without penalty Spring recess begins, 7:20 p.m.
Mar. 24	M	Classes resume, 8:20 a.m.
Apr. 25	F	Classes end; reading period begins, 5:30 p.m. Last day to withdraw from a class with penalty, 5 p.m.

May 1–7	TH–W	Final examinations
May 7	W	Spring term ends, 5:30 p.m.
May 12	M	Spring-term grades due for graduating students
May 19	M	University Commencement
May 28	W	Spring-term grades due for continuing students

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A MESSAGE FROM THE DEAN

Since its founding in 1900, the Yale School of the Environment (YSE) has been at the forefront of environmental science and scholarship, training generations of leaders who have tackled some of the most pressing challenges of their time. Today, we continue to build on this solid foundation by providing research, teaching, and public engagement aimed at creating a healthier, more equitable and sustainable world.

Our faculty, students, and alumni are bringing a science-to-solutions focus to tackling the climate crisis and a wide scope of critical environmental issues. They are engaging in novel cross-disciplinary scholarship and practice in energy policy, ecosystem science and biogeochemistry, hydrology, urban science, green chemistry, and environmental justice, among many other areas. The teaching and study of forestry has been, and remains, a core strength of our school since its founding. The Forest School at YSE is a hub for practitioners and land stewards in forest-related fields worldwide, bringing together innovative, multidisciplinary research and practice to find solutions to the challenges that face the world's forests.

Our alumni—who today number more than 5,600—are tackling complex, high-stakes environmental, social, and economic challenges in every corner of the world. They work in NGOs, government, industry, academia, law, public health, and communications, among other sectors. Our highly engaged alumni network is an invaluable resource for students, providing mentorship and support as they prepare to make their own impact in the environmental sphere.

In the past several years, we have made great progress in expanding our capacity to address global environmental challenges in many areas. In 2023–2024, the school welcomed its first cohort of Three Cairns Scholars and second cohort of Three Cairns Fellows through the Three Cairns Climate Program for the Global South.The Three Cairns Scholars program allows YSE to meet 100 percent of the demonstrated tuition need for qualified master's students from the Global South who are committed to combatting climate change in their home countries and regions. The Three Cairns Fellows program supports mid-career environmental professionals from the Global South who are seeking to enroll in two of YSE's highly rated online certificate programs, Financing and Deploying Clean Energy and Tropical Forest Landscapes: Conservation, Restoration, and Sustainable Use.

In the fall of 2023, we were thrilled to be able to launch the Bekenstein Climate Leaders Program, which, through a combination of scholarships, internship stipends, and postgraduate incentives, will help make it more affordable for emerging climate leaders across YSE and Yale to pursue high-impact careers in areas of high need, such as government and the nonprofit sector. With the window of time to reduce emissions rapidly closing, the initial primary focus of the Bekenstein Climate Leaders Program will be on climate change mitigation.

To help prepare urban policymakers and practitioners to implement innovative climate solutions, YSE and the Hixon Center for Urban Sustainability launched a new certificate program in Urban Climate Leadership in 2024. Karen Seto, Frederick C. Hixon Professor of Geography and Urbanization Science, and Mark Ashton, senior

associate dean of The Forest School and Morris K. Jesup Professor of Silviculture and Forest Ecology, are co-leading the nine-month program that kicks off its inaugural semester in August 2024. The Clean and Equitable Energy Development (CEED) Certificate Program, which was co-developed by The Yale Center for Business and the Environment and the Yale Center for Environmental Justice, also welcomed its inaugural cohort in the fall of 2024. The twelve-week program, designed for long-time and burgeoning energy professionals, covers foundational energy concepts, environmental and climate justice topics and issues, approaches to energy justice, and the practical aspects of energy project development.

YSE also welcomed Arianna Salazar-Miranda to the faculty as assistant professor of urban planning and data science in July. Salazar-Miranda, who earned her doctorate in computational urban science and planning from MIT, uses machine learning, sensing, spatial analysis, mapping, and related historical work to examine the impact of development paradigms on social and environmental dimensions of urban life, including patterns of sedentarism, social mixing, greenhouse gas emissions (GHG), and exposure to environmental risks. She joins an unparalleled group of environmental scholars and practitioners who are committed to advancing the knowledge and leadership we need to achieve a sustainable future. Her esteemed colleagues include Eli Fenichel, Knobloch Family Professor of Natural Resource Economics, who returned to YSE in 2023 after serving as the assistant director for natural resource economics and accounting in the White House Office of Science and Technology Policy, where he led a historic effort to expand the U.S. economic accounting system to better capture the links between nature and the economy; Sara Kuebbing, director of the Yale Applied Science Synthesis Program, who co-authored the Department of Energy's groundbreaking "Roads to Removal" report that lays out a pathway to remove at least one billion metric tons of carbon dioxide annually from the atmosphere by 2050 and store it on a gigaton scale through careful management of forests; and Daniel Esty, Hillhouse Professor of Environmental Law and Policy, who took leave from Yale to work with World Trade Organization Director-General Ngozi Okonjo-Iweala on developing a sustainability agenda for a trading system that better aligns the WTO with the world community's commitment to achieve net-zero greenhouse gas emissions by 2050.

Since its founding, the School of the Environment has demonstrated the willingness and strength to adapt to the evolving challenges facing our world. I have never felt more confident about how well poised we are to fulfill our mission of providing knowledge and leadership for a sustainable future!

Indy C. Burke
Carl W. Knobloch, Jr. Dean
School of the Environment

SCHOOL MISSION

The Yale School of the Environment aspires to lead the world toward a sustainable future with cutting-edge research, teaching, and public engagement on society's evolving and urgent environmental challenges.

Our mission is grounded in seven fundamental values:

Excellence We promote and engage in pathbreaking science, policy, and business models that build on a fundamental commitment to analytic rigor, data, intellectual integrity, and excellence.

Leadership We attract outstanding students nationally and internationally and offer pioneering curricula that impart the knowledge and skills needed to lead in a range of environmental sectors and professions.

Sustainability We generate knowledge that will advance thinking and understanding across the various dimensions of sustainability.

Community We are a community that finds strength in its collegiality, diversity, independence, and commitment to excellence and lifelong learning.

Diversity We celebrate our differences and identify pathways to a sustainable future that respects diverse values including equity, liberty, and civil discourse.

Collaboration We foster collaborative learning, professional skills development, and problem solving—and we strengthen our scholarship, teaching, policy work, and outreach through partnerships across the university and beyond.

Responsibility We encourage environmental stewardship and responsible behavior on campus and beyond.

In pursuit of our mission, we:

- Build on more than a century of work bringing science-based strategies, ethical considerations, and conservation practices to natural resource management
- Utilize systems thinking and approach problems from interdisciplinary perspectives
- Integrate theory and practice—and develop innovative solutions to society's most pressing environmental problems
- Address environmental challenges at multiple scales from local to global and multiple settings from urban to rural and from managed to wild—including working lands and landscapes
- Draw on the depth of resources at Yale and its network of alumni that extends across the world
- Create opportunities for research and policy application as well as professional development through a structure of faculty-led centers and programs
- Provide a neutral forum to convene conversations on difficult issues that are critical to progress on sustainability

- Bring heightened focus to the most significant threats to a sustainable future, including climate change, the corresponding need for clean energy, biodiversity loss, and the increasing stresses on our natural resources

HISTORY OF THE SCHOOL OF THE ENVIRONMENT

The school was established in 1900 as "The Yale Forest School" with a founding gift from the family of Gifford Pinchot, B.A. 1889, LL.D. 1925, a pioneer in the conservation movement who would later become the first head of the U.S. Forest Service. Through Pinchot's vision and the work of the Forest School, Yale led the way in creating a new model of forest management and natural resource conservation, educating many of the nation's first foresters — a vanguard of professionals who shaped our modern understanding of conservation, environmental education, and public lands. In fact, during its first four decades, the school would produce the first four U.S. Forest Service chiefs.

Over the past century, the school has grown from a more narrowly focused forestry program to an international institution with a diverse array of students from across the world graduating each year. In 1972, in recognition of its increased scope, the school changed its name to the Yale School of Forestry & Environmental Studies.

Then, on July 1, 2020, the School again changed its name to the Yale School of the Environment (YSE) to better reflect its established role as a leader in environmental scholarship and practice.

At the same time, the school established The Forest School at the Yale School of the Environment in recognition of its founding mission and because the teaching and study of forestry and forest science remain one of its core strengths. YSE students learn the principles of natural resource management through the innovative research and sustainable practice occurring at the nearly 11,000 acres of actively managed forests in Connecticut, New Hampshire, and Vermont that constitute Yale Forests.

In addition to forest science and management, research and teaching at the Yale School of the Environment cover a broad range of environmental disciplines, including ecology, ecosystems, and biodiversity; environmental justice; environmental management and social ecology in developing societies; green chemistry and green engineering; global change science and policy; health and environment; industrial environmental management; policy, economics, and law; urban science, environmental planning, design, and values, among others.

The school has more than 5,600 living alumni who are working across the globe on a range of environmental challenges. They work in NGOs, government, business, academia, law, public health, and communications, among numerous other sectors.

Over the past two decades, the school has strengthened its connections within the wider Yale community and with external partners, introducing joint programs with Yale Law School and with the Yale Schools of Engineering & Applied Science, Management, Public Health, and Architecture, as well as with partner universities including Pace Law School, Vermont Law School, and Tsinghua University in China.

During the 1990s, YSE established and invested in a range of new centers, programs, and initiatives to expand its work beyond faculty research and classroom learning. Today, they number more than twenty and serve as dynamic foci for outreach to

alumni, wider professional audiences, and community organizations on critical issues such as climate change, environmental justice, tropical forestry, environmental communication, industrial ecology, and urban ecology, among others.

In 2017, YSE unveiled an ambitious new Strategic Plan. Among the plan's goals was the development of new curricula that track current and evolving strengths; increased programs and hiring to address environmental equity and diversity issues; a new emphasis on research and training in environmental communication; and expanded interdisciplinary research. Since then, the school has adopted a new curriculum for the Master of Environmental Management program, which places more emphasis on subject specialization while maintaining its signature flexibility; introduced the Yale Center for Environmental Communication; and created the Yale Environmental Dialogue, an initiative that has engaged environmental leaders from a wide range of disciplines and sectors to inject new ideas and fresh energy into the national conversation on environmental policy. The school also is continuing to develop and strengthen strategic initiatives focused on environmental data, urban science, and environmental health and justice, including the development of two new certificate programs for career professionals: the Urban Climate Leadership certificate program and the Clean and Equitable Energy Development certificate program.

YSE's faculty and students have also become more diverse and representative of the wider world, convening from a range of professional, cultural, and sociological backgrounds. In 2020, the School welcomed to the faculty Dorceta Taylor and Gerald Torres, two of the country's preeminent scholars in the field of environmental justice, and Yuan Yao joined the faculty as an assistant professor of industrial ecology and sustainability systems. In 2023, Sparkle Malone, an expert on disturbance ecology and ecosystem dynamics, and Paulo Brando, an internationally recognized expert in tropical ecosystems, joined the faculty. In 2024, the school welcomed Arianna Salazar-Miranda, an expert in urban data science.

In 2021, a $100 million gift from FedEx to Yale helped to establish the Yale Center for Natural Carbon Capture (YCNCC), which focuses on developing natural solutions for reducing atmospheric carbon. Liza Comita, YSE professor of tropical forest ecology, co-directs the Center, along with David Bercovici, the Frederick William Beinecke Professor of Earth & Planetary Sciences. Professors Malone and Brando, whose positions are supported by YCNCC, also serve on its Scientific Leadership Team, as do YSE faculty Mark Ashton, Mark Bradford, Peter Raymond, and Julie Zimmerman.

In 2022, the Yale School of the Environment partnered with the Three Cairns Group to launch the Three Cairns Climate Program for the Global South, a transformative initiative aimed at supporting the next generation of environmental leaders. Established with a historic gift from the Three Cairns Group, the cornerstone of the program is the Three Cairns Scholars program, which allows YSE to meet 100 percent of the demonstrated tuition need for qualified master's students from the Global South who are committed to combatting climate change in their home countries and regions. The Three Cairns Fellows program expands access to YSE's highly regarded online certificate programs. The gift supports the Urban Climate Leadership certificate program and the development of a certificate program in environmental data science for climate solutions, both with a focus on the Global South.

In 2023, the Center for Green Chemistry and Green Engineering at Yale directed by Paul Anastas, Teresa and H. John Heinz III Professor in the Practice of Chemistry for the Environment, launched a U.N.-backed initiative, the Global Greenchem Innovation and Network Programme, to greatly accelerate research, development, and training in green chemistry in Indonesia, Jordan, Peru, Serbia, Uganda, and Ukraine.

In 2024, an exciting gift from Anita and Joshua Bekenstein ’80 to the Yale School of the Environment, the largest in the school’s history, established the Bekenstein Climate Leaders Program. This transformative, university-wide program aims to increase the ranks of Yale graduates in climate leadership roles and accelerate the pace of climate action. Through a combination of scholarships, internship stipends, and post-graduate incentives, the program will help make it more affordable for emerging leaders to pursue high-impact careers in areas of high need, such as government and the nonprofit sector.

LEADERSHIP FOR SUSTAINABILITY

Through its scholarship, teaching, practice, and power to convene, the Yale School of the Environment (YSE) is a leader in the development and implementation of sustainable practices locally and globally. The school creates new knowledge in the science of sustainability and new methods of applying that knowledge to environmental management and sustainable development, including the restoration of degraded environments.

On the Yale campus, the school has stepped up as a model in the sustainable use of resources and materials and has helped develop strategies and programs to achieve sustainability goals campus-wide. In 2016, Yale committed to becoming carbon neutral by 2050. The university formed a task force to review and propose ambitious goals for reducing emissions, with a specific charge to explore how Yale could achieve net-zero carbon emissions. YSE's Kroon Hall is a LEED platinum building. The Yale Carbon Charge, an initiative born in a YSE classroom and developed in part by YSE faculty and students, has grown into a first-of-its-kind campus-wide effort to reduce energy use through the use of internal carbon pricing.

In 2019, the university created a new multidisciplinary laboratory, the Yale University Carbon Containment Lab, which is developing and supporting innovative, scalable solutions to the climate challenge. In 2024, the CCL spun off from Yale University to become an independent nonprofit with plans to continue strong collaborations with Yale.

Yale's Center for Natural Carbon Capture, established in 2021 with a $100 million gift from FedEx, focuses on developing interventions that enhance the Earth's natural abilities to store carbon through biological and geological processes, and other methods that model natural processes. The interdisciplinary center is part of the university's broader Planetary Solutions Project.

Since its inception, the school has been working on the sustainable management of forests across the world—for biological diversity, for natural resource production, and, most recently, for carbon storage. For more than twenty years, the YSE-based Urban Resources Initiative (URI) has promoted community-based land stewardship, urban forestry, and green job training in the city of New Haven. Each year, YSE students and faculty work with landowners in northeastern Connecticut to promote sustainable forestry practices as part of the Quiet Corner Initiative. Many YSE students work as research assistants at the Yale Office of Sustainability, on projects ranging from sustainable materials management to climate resilience, all of which directly support the university's Sustainability Plan 2025. Established in 1998, the Center for Industrial Ecology at YSE, which integrates many aspects of the circular economy and sustainability, brings together Yale staff, students, visiting scholars, and practitioners to develop new knowledge at the forefront of the field of industrial ecology. Research is carried out in collaboration with other segments of the Yale community, other academic institutions, and international partners.

Classroom learning often extends into local communities, where students have helped officials with climate resilience and adaptation strategies, green infrastructure

development, and sustainable land stewardship and resource management plans. Their work has addressed a sweeping array of complex environmental challenges from dealing with lead-contaminated water in Flint, Michigan, to endangered species conservation in China. Our alumni also continue this commitment to sustainability in all its forms through their leadership in academic research, major corporate initiatives, government programs, and the nonprofit sector.

MASTER'S DEGREE PROGRAMS

Two-Year Master's Degree Programs

The School of the Environment offers four two-year master's degrees: the professionally oriented Master of Environmental Management (M.E.M.) and the Master of Forestry (M.F.), and the research-oriented Master of Environmental Science (M.E.Sc.) and Master of Forest Science (M.F.S.). The M.F. and M.F.S. programs are administered within the Yale Forest School. All the master's degree programs vary in their level of prescription, but all are sufficiently flexible to accommodate the diverse academic backgrounds, professional experiences, and career aspirations of a large and vibrant student body. The program curricula draw from more than 150 courses taught by more than fifty YSE faculty, as well as from courses taught elsewhere at Yale. Each student's course of study is customized through consultation with a faculty adviser who guides the student's learning experience from the first week at Yale until graduation. The master's degree programs require a minimum of two years in residence, 48 credits of coursework at Yale, a summer internship or research experience, and completion of the Training Modules in Technical Skills prior to the student's first term (see below).

MASTER OF ENVIRONMENTAL MANAGEMENT

The Master of Environmental Management curriculum draws from coursework in the natural and social sciences and focuses on the complex relationships among science, management, and policy. The purpose of the program is to provide students with an in-depth understanding of natural and social systems that can be applied to environmental and natural resource problem-solving in a policy or management context. In addition to coursework, students are expected to hone their capacities as leaders and managers through summer internships, professional skills courses, and other opportunities.

The M.E.M. curriculum requires students to focus on an area of specialization, while still offering the flexibility to tailor their course programming in a way that exposes them to other disciplines and subject areas. This structure assures that students develop both depth and breadth in their course study. All M.E.M. students take the fall Perspectives course (ENV 553), demonstrate interdisciplinary conversancy through either taking or satisfying waiver requirements for four 1.5-credit foundational-knowledge courses (ENV 511, ENV 512, ENV 521, and ENV 522), and complete a capstone course or project. They round out their experience with general electives and a selection of at least four Professional Skills Modules.

Specializations are designed to ensure that students obtain sufficient depth in their chosen area of study. The specializations are:

1. Business and the Environment
2. Climate Change Science and Solutions
3. Ecosystem Management and Conservation
4. Energy and the Environment
5. Environmental Policy Analysis
6. Industrial Ecology and Green Chemistry

7. People, Equity, and the Environment
8. Urban
9. Water Resource Science and Management

Specialization requirements account for 18 of the 48 total credits required for the M.E.M. degree, made up of two core courses and four electives, and it is possible to add a second specialization. Students will be asked to choose their specialization at the end of their first term of study, and this specialization will be listed on their transcript upon completion. Students may also propose a self-designed specialization path in collaboration with a faculty adviser and the senior associate dean of academic affairs.

MASTER OF FORESTRY

The Master of Forestry program trains professionals for the protection, management, and restoration of native forests and woodlands and associated human-made forest ecosystems (urban trees, agroforests, plantations); and for mediating and resolving the conflicting values of society that concern forests and associated ecosystems. Since 1900, the Master of Forestry program has provided leadership in the education of professional foresters. It is the oldest continuing forestry program in the Western Hemisphere. Almost all the early foresters in North America had their roots at Yale, including Aldo Leopold, M.F. 1909, and nine of the first twelve chiefs of the USDA Forest Service.

Master of Forestry graduates have pursued a variety of professional opportunities in forestry. Most start as general practitioners in management and, with experience, move through management to become policymakers and organizers. Some graduates use the degree as preparation for advanced study in doctoral programs.

The broad objective of the two-year M.F. program is realized by requiring a multidisciplinary suite of formal coursework coupled with a progressive synthesis of knowledge in a significant project. Coursework is supplemented through an array of local, regional, national, and international field trips to witness the practice of forestry in diverse settings. Real-world professional experience is provided through the Yale Forest and summer internships at a wide variety of resource management and policy organizations. Opportunities to engage in discussion with forest leaders are provided through workshops, meetings with visiting speakers of national and international repute, and involvement in the School's programs such as the Yale Forest Forum, the Forests Dialogue, the Tropical Resources Institute, and the Urban Resources Initiative.

The teaching objectives of the M.F. program are (1) to integrate knowledge about forests, natural resources, and society to form a sound basis for making management decisions; (2) to provide electives and other educational opportunities to specialize by focusing on a particular land use or management issue concerning forest ecosystem management; and (3) to provide opportunities for independent problem solving, critical thinking, and self-development. Students take a mixture of natural, social, and quantitative science courses, culminating in the second year with courses in integrated resource management and leadership. Flexibility in the choice of courses within the core curriculum, as well as choice of electives, allows each student to tailor the program to a desired specialization. Sample specializations have included community development and social forestry; protected areas management; extension and education; consulting

forestry; business; watershed health and restoration; tropical forest management; agroforestry; and industrial forest management.

The Master of Forestry degree is accredited by the Society of American Foresters (SAF). A minimum of two full years in residence and sixteen full courses (48 credits) is required for completion of this program.

MASTER OF ENVIRONMENTAL SCIENCE/MASTER OF FOREST SCIENCE

The Master of Environmental Science and the Master of Forest Science degree programs are expressly designed for students wishing to conduct research that contributes to basic and applied knowledge in any of the fields taught at YSE, such as ecology, hydrology, social ecology, economics, industrial ecology, or policy. These degrees are intended to facilitate a deeper disciplinary focus than the Management degrees, while allowing students the flexibility in course election that will allow them to meet diverse educational goals. The Master of Environmental Science is intended for students who wish to work broadly in different fields of environmental science. The Master of Forest Science is intended for students who wish to work in forest-related topics.

The course of study for both degrees includes formalized School-level training in the philosophy and practice of science. Training is provided through key courses in combination with extended project research and disciplinary and nondisciplinary electives. The scientific research required for this degree will be conducted in close collaboration with a YSE faculty adviser. *Therefore students must have a commitment from a faculty adviser before being admitted to these degree programs*. The Master of Environmental Science and Master of Forest Science programs require the student to produce a "scholarly product." This product may take the form of a traditional master's thesis or a paper(s) submitted to a refereed journal.

TRAINING MODULES IN TECHNICAL SKILLS (MODS)

All incoming master's students participate in MODs, shorthand for field modules, which offer students the opportunity to participate in experiential learning. MODs will take place during August of 2024, with students rotating among different modules over the course of two weeks. Participating in MODs is a graduation requirement and an important opportunity to engage with classmates and build relationships.

Five-Year Program for Yale College and Yale-NUS College Students

The School of the Environment offers joint-degree, five-year options (with one year at YSE) that culminate in a baccalaureate and master's degree intended for students who want to pursue careers in an environmental field. The joint-degree option is available to all undergraduates in Yale College and to environmental studies majors at Yale-NUS College. The program provides well-prepared students with accelerated graduate training in environmental science, management, and policy. Eligible students may apply for either a Master of Environmental Management (M.E.M.) or Master of Environmental Science (M.E.Sc.) degree. The program is built on careful integration of a student's undergraduate curriculum with graduate requirements. Graduates

have become highly successful leaders within governments, corporations, nonprofit organizations, and academia.

Yale students interested in the five-year joint-degree program should apply to the program at the end of the fall term of their senior year, or in the two years immediately following graduation. Students in the five-year M.E.M. program are encouraged to take a gap year, or a year away from academia, between completing their undergraduate degree and beginning study at YSE. Applicants interested in applying to the M.E.Sc. should make an appointment to talk to the YSE Office of Admissions at admissions.yse@yale.edu prior to applying.

Joint-Master's-Degree Programs

The School of the Environment supports several curricula that work concurrently toward two degrees from different academic units of Yale University. Opportunities for development of joint-degree programs exist with the School of Architecture, Divinity School, Law School, School of Management, School of Public Health, School of Engineering & Applied Science, Jackson School of Global Affairs, the International and Development Economics program of the Graduate School's Department of Economics, and three programs offered by the Graduate School and coordinated through the MacMillan Center (African Studies, East Asian Studies, and European and Russian Studies). Joint-degree programs with Pace Law School and Vermont Law School constitute additional options. Applicants are urged to apply to both units at the same time. All of these programs are subject to the following general guidelines.

Applicants must apply to, and be accepted by, both units of the university according to normal admissions procedures. A minimum of one and one-half years (three full-time terms) and 36 credits is required at the School of the Environment. While the joint-program requirements vary in length (see below), it is recommended that students spend a complete academic year (two terms) at one school, the following academic year at the other school, and then split the remaining terms between the two schools.

Upon successful completion of the formal joint-degree program, the student will be awarded one of the four YSE master's degrees, together with the joint degree. The joint-degree programs, sponsoring Yale academic units, and associated residency requirements (which are in addition to the three-term requirement of YSE) are as follows:

1. School of Architecture: Master of Architecture I (five terms); Master of Architecture II (three terms).
2. Divinity School: Master of Arts in Religion (three terms); Master of Divinity (five terms).
3. Schools of law (Yale Law School, Pace Law School, and Vermont Law School): Juris Doctor (five terms).
4. School of Management: Master of Business Administration (three terms).
5. School of Public Health: Master of Public Health (three terms).
6. School of Engineering & Applied Science (Graduate School of Arts and Sciences): Master of Science (two terms).
7. Jackson School of Global Affairs: Master of Arts (three terms).

8. Department of Economics, International Development and Economics program (Graduate School of Arts and Sciences): Master of Arts (two to three terms).
9. African Studies (Graduate School of Arts and Sciences): Master of Arts (three terms).
10. East Asian Studies (Graduate School of Arts and Sciences): Master of Arts (three terms).
11. European and Russian Studies (Graduate School of Arts and Sciences): Master of Arts (three terms).

To view specific requirements for each joint-degree program, visit https://environment.yale.edu/academics/masters/joint-degrees. For additional questions about these joint-degree programs, please contact the YSE Office of Admissions at info.yse@yale.edu or 800.825.0330.

JOINT-DEGREE PROGRAM WITH TSINGHUA UNIVERSITY

YSE offers a three-year joint-degree program with Tsinghua University School of Environment in China. This program consists of one and one-half years (three terms) at Tsinghua working toward a Master of Environmental Engineering and one and one-half years (three terms) at Yale working toward a Master of Environmental Management, Master of Environmental Science, Master of Forestry, or Master of Forest Science. Students who begin their program at YSE will spend one year (two terms) at YSE, followed by one and one-half years (three terms) at Tsinghua, and then conclude their program with one-half year (one term) at YSE. Students who begin their program at Tsinghua will spend one year (two terms) at Tsinghua, one and one-half years (three terms) at YSE, and then conclude their program with one-half year (one term) at Tsinghua.

Applicants must apply to, and be accepted by, both YSE and Tsinghua University under normal admissions procedures. For questions about this joint-degree program, please contact the YSE Office of Admissions at info.yse@yale.edu or 800.825.0330.

Part-Time Program

Students who wish to obtain a degree through the part-time option must complete the same curriculum as full-time students. Students must complete two part-time terms to equal a full-time term regardless of meeting credit requirements. Students must enroll for 6 to 8 credits per term and must complete the degree requirements within five years of matriculation. Part-time tuition will be $12,812.50 per term for the academic year 2024–2025.

Special Students

For those who do not wish to pursue a degree program, YSE offers the option of special-student status. Special students may be registered for a period as short as one term and may enroll in a minimum of one course or elect to take a full load of four courses per term. Please note that international applicants who are not coming through a preestablished Memorandum of Understanding between a partner university and Yale University will likely not be able to participate in the special-student program. Special students may not be eligible to participate in the summer Training Modules in

Technical Skills. Under normal circumstances, no one may hold special-student status for more than one academic year. No degree or certificate is granted for special-student course work. Students will receive official transcripts of course work completed. For information on tuition for special students, see the chapter Tuition, Fees, and Other Expenses.

Special students wishing to matriculate in a degree program after completing courses will need to apply and be admitted through the YSE admission process described in the chapter Admissions: Master's Degree Programs. Course credits earned while in special-student status will not be applied toward any degree credit requirements, and any fees paid while in attendance as a special student will not be applied toward degree tuition requirements.

DOCTORAL DEGREE PROGRAM

The Doctor of Philosophy (Ph.D.) degree is conferred through the Yale Graduate School of Arts and Sciences. Work toward this doctoral degree is directed by the Environment department of the graduate school, which is composed of the faculty of the School of the Environment. Doctoral work is concentrated in areas of faculty research, which currently encompass the following broad foci: agroforestry; biodiversity conservation; biostatistics and biometry; climate science; community ecology; ecosystems ecology; ecosystems management; energy and the environment; environmental and resource policy; environmental anthropology; environmental biophysics and meteorology; environmental chemistry; environmental ethics; environmental governance; environmental health risk assessment; environmental history; environmental law and politics; environmental management and social ecology in developing countries; forest ecology; green chemistry and engineering; hydrology; industrial ecology; industrial environmental management; plant physiology and anatomy; pollution management; population ecology; resource economics; silviculture; social ecology; stand development, tropical ecology, and conservation; sustainable development; urban ecology; urban geography; urban land cover change; urban planning; and water resource management.

REQUIREMENTS FOR THE DOCTORAL DEGREE

All courses listed in this bulletin are open to students working toward the doctoral degree. Additional courses are available in other departments—e.g., Anthropology; Chemistry; Earth and Planetary Sciences; Ecology and Evolutionary Biology; Economics; Management; Mathematics; Molecular, Cellular, and Developmental Biology; Political Science; Sociology; and Statistics and Data Science—and are listed in the bulletin of the graduate school.

A doctoral committee will be appointed for each student no later than the student's second term in the program. The committee consists of a minimum of two faculty members from the Yale University community. When appropriate for their research areas, students are encouraged to suggest committee members from other universities or institutions. Doctoral students work under the supervision of their doctoral committees. The committee should be chaired or co-chaired by a YSE ladder faculty member.

Students are required to take the Doctoral Student Seminar (ENV 900) during the first year of their program.

Two Honors grades must be achieved before a student is eligible to sit for the qualifying examination. In addition, students are expected to serve four terms (ten hours per week) as teaching fellows, in partial fulfillment of their doctoral training.

A written and oral qualifying examination is required upon completion of the course requirements. Students are expected to take the examination by the end of their second year, although this can be extended to the third year in cases with appropriate extenuating circumstances. At the time of the qualifying examination, the student must present a prospectus of the research work proposed for the dissertation. Successful

completion of the qualifying examination and submission of the prospectus will result in admission to candidacy.

The director of doctoral studies (DDS) of the school serves as director of graduate studies for the Environment department of the graduate school, administers the doctoral program, and may be consulted if questions arise.

Before beginning work, the student must secure approval from the student's committee and the DDS for a proposed program of study and for the general plan of the dissertation. Appropriate advanced work is required. Courses chosen should form a coherent plan of study and should support research work for the proposed dissertation.

The dissertation should demonstrate the student's mastery of the chosen field of study as well as the ability to do independent scholarly work and to formulate conclusions that may modify or enlarge previous knowledge.

Candidates must present themselves for the oral defense of the dissertation at such time and place as the student, the DDS, and the committee determine. Upon completion of the dissertation, the candidate must make unbound copies of the dissertation available to the faculty. Copies of the approved dissertation must be submitted to the graduate school.

COMBINED DOCTORAL DEGREE

Department of Anthropology

The School of the Environment offers a combined doctoral degree with Yale's Department of Anthropology. The purpose of the degree is threefold: it combines (1) the disciplinary identity and strengths of the Anthropology department with the interdisciplinary character and possibilities of YSE, especially in terms of bridging the social and natural sciences; (2) the strengths in ecological and environmental studies of YSE with the social science strengths of the Anthropology department; and (3) the Anthropology department's strengths in theory with the emphasis within YSE on linking theory with policy and practice. The combined doctoral degree offers its graduates great flexibility when entering the marketplace. They can represent themselves as anthropologists and/or environmental scientists, as theoreticians and/or practitioners. They have the credentials to apply for policy-oriented positions with international institutions, as well as academic positions in teaching and research. The academic program of each student in the combined-degree program is to some extent tailored specifically to that student's particular history, interests, and needs, but all combined-degree students are expected to follow the program's general guidelines.

Prospective combined-degree students must initially apply either to Anthropology or to the doctoral program in Environment (not both) and check the combined-degree box on the application form. Students should communicate with faculty in both programs during the year prior to application, and they should apply to the program where their credentials and faculty contacts offer the greatest chance of admission. The program is extremely competitive, accepting one or two students per year out of dozens who apply. (Note: most successful applicants to YSE hold a prior master's degree.)

Once a student is accepted in either Environment or Anthropology, the application file is sent to the second department for consideration. A positive decision at this point

amounts to acceptance into the combined-degree program. (A negative decision, which is rare in any case, does not affect the student's prior admission into the first program.) Students admitted into the combined-degree program will be allocated to the department to which they initially applied as their primary administrative home, but they will enter Yale as members of the combined-degree program. A student who does not apply to the combined-degree program at the time of their initial application to Yale may still apply after matriculating at Yale, but this should be done as soon as possible in their first term on campus.

Detailed guidelines for the combined-degree program can be found on the YSE website at http://environment.yale.edu/doctoral/degrees/combined-anthropology. The program coordinators are Michael Dove (YSE) and Kalyanakrishnan Sivaramakrishnan (Anthropology).

New York Botanical Garden

The School of the Environment offers a combined doctoral degree with the New York Botanical Garden, which is funded by the Lewis B. Cullman Fellowship. The objective is to train biological scientists to use an interdisciplinary approach to solving problems associated with tropical environments.

Areas of study include agroforestry and forest management, ecosystem analysis, economic botany, economic evaluation of tropical resources, ethnobotany, plant biodiversity and conservation, social processes affecting management of natural resources, tropical field studies, and tropical silviculture.

For more information about the combined doctoral degree, please contact the director of doctoral studies at 203.432.5146.

SUBJECTS OF INSTRUCTION

Courses offered by the School of the Environment are described below. The letters "a" and "b" following the course numbers indicate fall- and spring-term courses, respectively. Courses with bracketed titles will not be offered during the 2024–2025 academic year.

Project courses involve individually assigned advanced field or laboratory work, or literature review, on topics of special interest to the student; credits and hours for these projects are determined for each student in consultation with the instructor.

Courses throughout the university are generally open to students enrolled in the School of the Environment, subject to limitations on class size and requirements for prerequisites.

COURSE DESCRIPTIONS

At YSE, new courses are often added after this bulletin is printed. Please visit our website at https://resources.environment.yale.edu/courses for an updated list. See also Yale Course Search at https://courses.yale.edu for many other environmental courses in other Yale departments.

ENV 511a, Ecological Foundations for Environmental Managers
This course gives students a fundamental mechanistic understanding about the way abiotic (e.g., climate) and biotic (e.g., resources, competitors, predators) factors determine pattern in the distribution and abundance of species. Students learn how individuals within a species cope with changing environmental conditions by altering their behavior, making physiological adjustments, and changing the allocation of resources among survival, growth, and reproduction. Students learn how populations of species coexist within communities and how species interactions within communities can drive ecosystem functioning. Students also learn how ecologists use scientific insight to deal with emerging environmental problems such as protecting biodiversity, understanding the consequences of habitat loss on species diversity, and forecasting the effects of global climate change on species population viability and geographic distribution. 1½ Course cr

ENV 512a, Microeconomic Foundations for Environmental Managers
This six-week course provides an introduction to microeconomic analysis and its application to environmental policy. Students study how markets work to allocate scarce resources. This includes consideration of how individuals and firms make decisions, and how policy analysts seek to quantify the benefits and costs of consumption and production. We consider the conditions under which markets are beneficial to society and when they fail. We see that market failure arises frequently in the context of environmental and natural resource management. The last part of the course focuses on the design of environmental and natural resource policies to address such market failures. The course is designed to cover basic knowledge of economics analysis and prepare students for ENV 834 and other more advanced offerings. 1½ Course cr

ENV 521a, Physical Science Foundations for Environmental Managers
This required foundational course provides students with the physical science basics that they need to understand and manage environmental problems. The course draws on climatology, environmental chemistry, geology, hydrology, meteorology, oceanography, and soil science. Focus is on understanding both the underlying concepts and how they apply to real-world environmental challenges. Useful both as a freestanding course and as a gateway to a wide spectrum of intermediate and advanced courses. 1½ Course cr

ENV 522a, Human Science Foundations for Environmental Managers Amity Doolittle
The environmental fields of inquiry that focus on human behavior, culture, governance, and history have matured and proliferated in the twenty-first century. New scholarship has advanced the academic state of knowledge and sharpened our collective ability to understand human-environmental relations. Yet despite better science, we struggle to make material change in the collective rate of human consumption of Earth's natural resources. Not only is the planet harmed by our failures, but millions of people are also harmed. Embedded in all scientific endeavors is a theory of change. But rarely are theories of change made explicit for environmental stewardship. In this course, we investigate new bodies of scholarship that explore relational values, varying concepts of stewardship, a range of theories of change, and, finally, capabilities or human rights-based measure of the life well lived. We explore the following questions: What does it mean to be an environmental steward in a world filled with social, political, and economic inequalities? How can we weave together multiple knowledge systems or ways of knowing through environmental stewardship? How can we balance the need for social and environmental change in a way that is both place-based and responsive to global concerns? Can theories of change help us act when the scientific data is both clear and uncertain? How can we incorporate non-economic measures of human well-being into our decision making? 1½ Course cr

ENV 550a, Natural Science Research: From Idea to Proposal
The course guides students through the process of developing an individualized research project in close partnership with their faculty adviser. We focus on writing a research proposal, which prepares students to apply for competitive research funding and is required of all M.E.Sc./M.F.S. students. In doing so, we cover critical reading of the literature, narrowing a broad topic of interest to a feasible research project, proposal writing, and a high-level introduction to the philosophy of science. Students engage in peer review throughout the course and present their completed proposals to the class at the end of the semester. 3 Course cr

ENV 551a, Qualitative Inquiry and Research Design
Qualitative research and analysis are critical for exploring complex questions of the human condition. As an approach to understanding the human-environmental nexus, qualitative research prioritizes understanding varied "ways of knowing." The tools we learn, through the exploration of academic literature include (1) oral methods (interviews, life histories, focus groups), (2) text-based methods (archival research and document or textual analysis), and (3) participatory methods, based in observation and knowledge co-production. Students learn how to interpret and analyze qualitative data, as well as evaluate the claims made by qualitative researchers. The course is intended for doctoral students who are in the beginning stages of their dissertation research,

as well as for MESc students developing research proposals for their thesis projects. Advanced undergraduate students are welcome. The final project for this course is a research proposal. While we discuss the value of mixed methods, this course does not cover quantitative approaches such as survey research, econometrics, Q methodology, spatial analysis, or social network analysis. 3 Course cr

ENV 552b, Master Student Research Conf. Peter Raymond
One of the most important aspects of scientific research involves the communication of research findings to the wider scientific community. Therefore, second-year M.E.Sc. and M.F.S. students are required to present the results of their faculty-supervised research as participants in the Master's Student Research Conference, a daylong event held near the end of the spring term. Student contributors participate by delivering a fifteen-minute oral presentation to the YSE faculty and student body or by presenting a research poster in a session open to the YSE community. Students receive a score of satisfactory completion for this effort. 0 Course cr

ENV 553a, Perspectives: Environmental Leadership
The course is intended to offer a common experience and exposure to the variety of perspectives represented by YSE faculty and guest experts on the challenges and opportunities of environmental management. This year's theme is Environmental Leadership, and over the term we create and foster a leadership toolkit and systems-thinking appreciation that enable first-year M.E.M. students to map out and maximize an impactful path through Yale, their careers, and their lives. 3 Course cr

ENV 568a, Geoengineering in the Context of Climate Overshoot
Despite dire warnings from the IPCC and earnest pledges of various governments and other institutions including Yale, our planet is likely to surpass the 1.5°C temperature anomaly threshold in this decade, placing us in the dangerous realm of temperature "overshoot." The course starts by examining our likely climate trajectory before critically examining the level of optimism that surrounds many proposed mitigation solutions. We then delve into the toolkit of climate responses that would become relevant in an overshoot scenario—not merely further mitigation and adaptation but also negative emissions technologies and strategies to reflect incoming sunlight. We examine not only the technological, economic, and political feasibility of these potential interventions but also their governance requirements and ethical implications. As I have found little literature illustrating what life in an overshoot world might entail, we create some. Our final project is to host a "cli-fi" short-story contest wherein students are asked to envision what they might see with their own eyes should the Earth transit 2°C in mid-century. 1½ Course cr

ENV 573a, Urban Ecology for Local and Regional Decision-Making
Urban ecology is the interdisciplinary study of urban and urbanizing systems from local to global scales. While urban ecology shares many features with the biological science of ecology, it emphasizes linkages with social, economic, and physical sciences and the humanities. Geographically, the subject includes central and edge cities, suburbs of various ages and densities, and exurban settlements in which urban lifestyles and economic commitments are dominant. In application, urban ecology can be useful as a social-ecological science for making cities more sustainable, resilient, and equitable. Emerging "grand challenges" in urban ecology include the development of robust approaches to and understanding of (1) integrated social-ecological systems in urban and urbanizing environments; (2) the assembly and function of novel ecological

communities and ecosystems under novel environmental conditions; (3) drivers of human well-being in diverse urban areas; (4) pathways for developing healthy, sustainable, and disaster-resilient cities; and (5) co-production of actionable science for policy, planning, design, and management. 3 Course cr

ENV 592a, Documentary Film Workshop Charles Musser
This workshop in audiovisual scholarship explores ways to present research through the moving image. Students work within a Public Humanities framework to make a documentary that draws on their disciplinary fields of study. Designed to fulfill requirements for the M.A. with a concentration in Public Humanities. 3 Course cr

ENV 594a, Global Carbon Cycle
Carbon is one of the most abundant elements in the universe, the building block for all of biochemistry, and the energy exchange material for the Earth's metabolism. Over the past two hundred years, people have mined fossil carbon to power the global economy, leading to profound transformations in the cycling of carbon among land, oceans, and atmosphere and disrupting Earth's climate. This course explores in detail the cycling of labile carbon among the major biogeochemical reservoirs. We spend roughly four weeks each on land and oceans and spend the final four weeks exploring carbon-climate. 3 Course cr

ENV 603a, Environmental Data Visualization for Communication
Welcome to the Information Age! It is now much easier to generate and access more data than ever before. Yet, our ability to manage, analyze, understand, and communicate all this data is extremely limited. Visualization is a powerful means of enhancing our abilities to learn from data and to communicate results to others, especially when informed by insights into human behavior and social systems. Developing the quantitative skills necessary for analyzing data is important, but for addressing complex and often urgent environmental problems that involve diverse audiences: understanding how to effectively communicate with data is equally essential for researchers, policymakers, and the public alike. This course is for students who wish to gain an understanding of the principles, tools, and techniques needed to communicate effectively with data. The course primarily uses the programming language R. Students are required to demonstrate basic proficiency in this software before or during the course. Resources for learning R are provided. Classes consist of short lectures about principles of design, data preparation, and visual communication, discussions about examples from the news and scientific literature, guest lectures, peer critiques, and hands-on individual and collaborative group activities. Throughout the semester, we use Excel, PowerPoint, R, Tableau, and other tools to develop visualizations using diverse datasets. Students also work with a dataset of their own choice or from a partner organization to develop a final project consisting of a poster, infographic, report, dashboard, story map, or related product. Enrollment is limited and application is required. 3 Course cr

ENV 605a, Environmental Risk Communication
Risk communication is a critical but often overlooked part of how organizations identify and manage risks. Effective risk communication can help people understand risks and determine appropriate responses to them. It should help people to take seriously risks they might otherwise ignore (e.g., to get vaccinated or evacuate from a coming hurricane), or to understand that certain activities do not pose significant risks. Effective risk communication enables environmental professionals to communicate

information in a way that is understood and accepted by different stakeholders (e.g., the public, industry, government leaders, etc.) and allows the participation of these stakeholders in risk management decisions. This course provides an overview of the theory and practice of effective communication about environmental and health risks to diverse stakeholders. Students are expected to actively participate in class discussions, drawing upon assigned readings, lectures, and videos. 3 Course cr

ENV 610a, Managing Ecosystems for Climate Change Solutions
This course explores how natural climate solutions (i.e., actions to protect, better manage and restore ecosystems) can mitigate climate change. It also assesses the challenges and barriers that must be overcome in order to make natural climate solutions more sustainable. During the course, students are exposed to concepts about how the conservation and management of natural and anthropogenic terrestrial ecosystems (e.g., conservation of natural ecosystems, forest and agriculture management, and restoration of degraded areas) have influenced the carbon and water cycles, two important climate services provided by terrestrial ecosystems. Students also address some of the potential socio-ecological consequences of nature-based solutions, with a focus in the tropics. Finally, the course covers some of the main challenges and opportunities for scaling up carbon natural climate solutions. 3 Course cr

ENV 613b, Writing for a Changing Environment Stephanie Hanes Wilson
This course is an advanced nonfiction writing workshop with a focus in journalistic storytelling, designed to help environmental scholars and practitioners write for a broad, lay audience. In other words, this is not just a class for writers—although those with an interest in journalism will find it useful. This is a course for students who recognize the importance of reaching broad audiences in a time of rapidly transforming climate, technology, science, and culture. We learn and practice the tools of journalism —the ability to listen, communicate, research, capture hearts, spread ideas, and explain complexity— and study writings that exemplify these attributes. Our focus topic in this course is climate and other environmental changes, with an intentional look to the global south as well as the US and global north. Students write multiple pieces of their own, from short research "explainers" to reported profiles to first person reportage. By the end of the course, students have refined at least one of their pieces to a quality to submit for publication. 3 Course cr

ENV 617b, Real-World Environmental Data Science Elena Grewal and Sarah McGowan
To make sound decisions, we need good data, but the reality is that data is often messy, difficult to find, and incomplete. This is a practical, accessible course for those looking to learn Python and gain the foundational skills necessary to work with real-world environmental data. The first half of the class teaches best practices for sourcing and cleaning data (missing data, duplicates, merging, etc). We then teach data visualization, mapping, and statistical techniques. No programming experience is required. The focus is on implementation, not statistics. There are assignments and a midterm. In the second half of the class, students apply skills in a data project of their choosing. We host guest speakers doing innovative work in environmental data science and provide an overview of advanced topics in machine learning, data ethics, and Python programming. 3 Course cr

ENV 618a, Anthropology of Smallholder Agriculture in Developing Countries
The premise of this course is that small-scale agriculture, its distinctive economic character, and its ecology shape each other in important ways. The course explores smallholder farming in the developing world through ethnographies. 3 Course cr

ENV 620b, History of Environmental Thought and Activism Dorceta Taylor
This course uses a race, class, and gender approach to examine the history of American environmental ideology and activism from the 1600s to the present. The course is divided into three units. The first unit examines environmental conditions in the city (health, sanitation, housing, overcrowding, occupational safety, and open space), the rise of urban American environmental consciousness, and activism related to urban issues. Unit II examines the rise of the conservation and preservation movements. It analyzes the relationship between hunting, wildlife extinction, and the rise of conservation ethics. This unit also examines the role of the countryside, frontier, and wilderness in environmental thought and activism. It examines conquest, conservation, primitivism, Transcendentalism, and Romanticism and the emergence of the preservation/conservation movement. Unit III focuses on contemporary environmental thought; it examines the birth of the modern environmental movement and the emergence of reform environmentalism. The course also examines the way in which a person's social class, race, gender, environmental, and labor market experiences influence their environmental perceptions and the kinds of environmental ideologies they develop. The course examines the rise of major environmental paradigms and the factors that make them influential. 3 Course cr

ENV 626b, Writing for Publication in the Natural Sciences Simon Queenborough
This course is intended to give students insights into the process of writing natural science manuscripts. The course guides students through writing a paper and ends the term with a submitted manuscript. We also consider various strategies for writing, accountability, time management, and productivity. The course is aimed at students in the natural sciences with analyzed data that they want to write up for publication. 3 Course cr

ENV 630b, The Physical Science of Climate Change Peter Raymond and Xuhui Lee
The course provides students with core knowledge on the processes controlling the earth's climate system. The first half of the class focuses on the four components of the earth climate system, providing a knowledge base on the atmospheric energy and water budgets and the roles of anthropogenic greenhouse gases, the oceans, land and cryosphere in altering these budgets. Students also learn how to run a climate GCM (general circulation model). The second half of the class focuses on impacts of climate change on a number of societal sectors including natural ecosystems, energy use, water resources, the food system and the built environment. 3 Course cr

ENV 633a, Critical Race Theory
This class studies critical race theory from its origins to its current expression. Understanding the deep interconnections between race and law, and how race and law are co-constitutive, is the project of critical race theory. One of the central claims of critical race theory is that racial subordination is not a deviation from the liberal legal ideal but is, unfortunately, part of its expression. We focus on the origins of the critique that is central to the development of the theory and contrast its analysis with conventional analytic frameworks on race and American law and society. Because it is a positive theory but also driven by a normative vision, we explore the possibility of

transforming the relationship between law and racial power. The law is not the only site of critical race theory; it has had a significant impact on other disciplines in the social sciences. We examine those impacts as well. 3 Course cr

ENV 634b, Ecology of Global Drylands William Lauenroth
This course explores the controls on the geographic distribution and community and ecosystem structure and functioning of drylands globally. Lectures, writing, and student-led discussions. 3 Course cr

ENV 635b, Renewable Energy Project Finance Daniel Gross
The course is intended to be a practicum, exposing students to real-world tools of the trade as well as the theory underlying them. In place of a textbook, students are provided with approximately 400 pages of actual project documents used for a U.S. wind energy project. Through weekly homework assignments, students develop the skills necessary to construct a detailed financial model, largely comparable to what would be used by an investment firm, project developer, or independent power producer. Modeling skills include sizing debt capacity, sensitivity analysis, stochastic forecasting, taxes, and the creation of financial statements. Lectures also provide an introduction to risk management, energy market dynamics, alternative contractual structures, financial structuring, and the core engineering and risks inherent in the most common renewable energy technologies. This course is primarily online but may include four to six in-person sessions, pending the instructor's availability to travel. While cross-listed at the School of Management, it follows the YSE academic calendar. Admission requires an application. 3 Course cr

ENV 641a, Market-Based Mechanisms for Water Management
This course provides students with both the theory and application of environmental water transactions (EWTs) to water management challenges, such as river restoration, drought-mitigation, and agricultural allocation. The geographic focus is primarily the western United States, as this region, out of necessity, has been very active in implementing EWTs in recent years. Other market-based mechanisms for water management also are explored, such as groundwater mitigation banks, urban stormwater markets, and water quality markets. The course also covers considerations such as environmental justice, tribal access to and use of water, and diversity/equity/inclusion in water management. A final project gives students the opportunity to develop a simple hydrological and water rights model for a fictional watershed to use as the basis for designing a suite of water transactions and market-based water management solutions. This is an online course taught by experienced professionals who value a hands-on approach to learning. In addition, the course features discussion of current events in water, case studies, and guest lectures from practitioners actively using market-based mechanisms for water management. 3 Course cr

ENV 642a, Environmental Justice/Climate Justice
This course focuses on the evolution and development of the environmental justice movement and environmental justice law in the United States. We begin with a legal and social-historical survey and trace that history to the current moment. We explore traditional environmental law's shortcomings and the legal and policy developments that have followed the environmental justice critique. Concepts of environmental and climate justice have driven the environmental legal movement since its inception, but only recently has environmental justice law been recognized as a legal field. This course introduces students to contemporary legal regimes, debates, and social

movements in the U.S. territories, Indian Country, and Hawai'i to explore how many environmental justice communities have responded to (or resisted) mainstream modalities of environmental law. This course explores law as one of many levers in enacting environmental justice, and students consider how grassroots organizing, public awareness and education, and litigation fit together in environmental and climate justice movements. Our discussion of environmental litigation considers traditional environmental statutes, complex tort (i.e., toxic/climate tort) actions, and constitutional case law. The class considers how environmental conditions and climate change implicate peoples' rights, including climate migration, drinking water access, tribal sovereignty, food access, industrial agriculture, and human health and well-being. For the final, each student chooses a particular movement or lawsuit (or one expression of it) and writes a paper bringing to bear all the questions we raise this semester. (For example, how did opposition from environmental justice advocates lead to a reformed climate change initiative in California? Or what lessons can we learn from Rise St. James' legal challenge against disproportionate pollution in "Cancer Alley"?) The paper need not focus on a domestic response because the environmental/climate justice critique is now global. *Note: This class will follow the Yale School of the Environment calendar.* 3 Course cr

ENV 645a, Urbanization, Global Change, and Sustainability
Urbanization and associated changes in human activities on the land (*land use*) and in the physical attributes of Earth's surface (*land cover*) have profound environmental consequences. Aggregated globally, these effects constitute some of the most significant human impacts on the functioning of Earth as a system. This course examines the interactions and relationships between urbanization and global change at local, regional, and global scales with an emphasis on the biophysical aspects of urbanization. Topics include urbanization in the context of global land use change, habitat and biodiversity loss, modification of surface energy balance and the urban heat island, climate change and impacts on urban areas, urban biogeochemistry, and urbanization as a component of sustainability. Emphasis is on management of urban areas *worldwide* or at national scales for planetary sustainability. 3 Course cr

ENV 646b, Regenerative Agriculture Systems
Agriculture systems both depend and have a profound impact on the natural and human environment. There is widespread recognition of the need for agriculture systems to be more regenerative: regenerative food producing systems are ones that contribute to the improvement of the environment and to human wellbeing, not just avoid damages. The aim of this course is to explore what makes food producing systems regenerative. While there is a lot of momentum around the framing of "regenerative agriculture," there is not a lot of detail about what actually makes a system regenerative. The goals of the course are to: provide technical understanding of the science of agricultural systems; develop practical experience applying this science to real world scenarios of strategy development in agriculture; and increase exposure to practitioners at the interface of agriculture and the environment. 3 Course cr

ENV 650b, Seminar in Wildland Fire of the Western United States
The goal of this seminar is to offer an introduction to the ecology and management, and the policy drivers, of wildland fire in western North America. We seek to build a base of knowledge and understanding regarding fire and its applications/management in modern forestry. We start by learning the basic history and ecology of forest fire,

then look at landscape-level fire behavior, prescribed fire applications, and the drivers of catastrophic fire. The course concludes with an applied field-learning experience managing fire at Yale-Myers Forest. We meet once a week, with a guest Zoom lecturer from the field of fire ecology and management joining most weeks. Each week, there is a presentation followed by a discussion of the lecture content and reading material assigned by the guest lecturer. Students are expected to have read the papers and to come with questions and thoughts ready to discuss. There are several field trips, and if logistically feasible, a prescribed burn that students are expected to participate in. 3 Course cr

ENV 652b, Wood: Structure and Function
This course focuses on the extraordinary diversity of wood anatomy at the cellular level, and on the practice of dendrochronology that allows students to take advantage of predictable, inter-annual variability in tree growth to reconstruct environmental history. The primary focus of the course is on common northeastern trees and other commercially important timber species. A primary goal is to participate in the development of a master tree-ring chronology for the School Forests. Enrollment limited to ten with permission of the instructor. Prerequisites: basic statistics and a background in tree physiology and anatomy are strongly recommended. 3 Course cr

ENV 653b, Maple: From Tree to Table
This course covers the cultural, industrial, and sustainable practices of nontimber forest products through the lens of maple sap and syrup. Maple sugar is a forest product unique to northeastern North America, and it has seen a resurgence in interest as global consumers seek nutritious, natural, and sustainably produced foods. This course covers the booming industry and culture around maple syrup, from backyard operations through modern 100,000-tap investment operations. Maple producers are on the front lines of climate change and forest health threats. The course provides students with the knowledge of how challenges related to forest health and climate change are directly impacting maple producers and how these producers are learning to adapt in ways that are environmentally friendly, ecologically sound, and financially competitive in a global market.

ENV 659b, The Practice of Silviculture: Principles in Applied Forest Ecology
The scientific principles and techniques of controlling, protecting, and restoring the regeneration, composition, and growth of natural forest vegetation and its plantation and agroforestry analogs worldwide. Analysis of biological and socioeconomic problems affecting specific forest stands and design of silvicultural systems to solve these problems. Applications are discussed for the management of wildlife habitat, bioenergy and carbon sequestration, water resources, urban environments, timber and nontimber products, and landscape design. Four to six hours lecture. One-hour tutorial. Seven days of fieldwork. Recommended: some knowledge of soils, ecology, plant physiology, human behavior, and resource economics. 4 Course cr

ENV 660a, Forest Dynamics
This course introduces the study of forest stand dynamics—how forest structures and compositions change over time with growth and disturbances. Understanding the dynamic nature of forest stands is important for creating and maintaining a variety of critical ecosystem services sustainably and synergistically, including sustainable supplies of wood products, biodiversity and wildlife habitats, water, fire protection, and others. Through readings, lectures, and discussions we explore forest development processes

and pathways, concentrating on the driving mechanisms and emergent properties including natural and human disturbances. This course is a core component of the M.F. degree but is explicitly designed to be accessible to anyone interested in an in-depth exploration of forest ecosystems. 3 Course cr

ENV 668b, Field Trips in Forest Resource Management and Silviculture
Seven- to twelve-day field trips to study the silviculture and forest management of particular forest regions. In previous years, classes have visited Slovenia, Germany, Austria, the United Kingdom, British Columbia, and, in the United States, the southern Coastal Plain and Piedmont, and the Allegheny, Appalachian, Adirondack, and Green mountains. Enrollment limited to sixteen.

ENV 670b, Southern Forest and Forestry Field Trip
This course augments our forestry curriculum by providing a forum for viewing and discussing forestry and forest management with practitioners. The trip provides M.F. candidates and other interested students with an opportunity to experience the diversity of southeastern forested ecosystems and ownership objectives ranging from intensively managed pine plantations to restoration and protection of endangered habitats. Students discuss forest management issues—including forest health, fragmentation, policy, law, and business perspectives—with landowners and managers from large industries, nonindustrial private landowners, TIMOs, federal and state land managers, NGOs, and forestry consultants. We also tour sawmills, paper mills, and other kinds of forest products processing facilities, active logging operations, and, weather permitting, participate on prescribed fires. Not least, we experience the unique cultures, food, and hospitality of the southeastern United States.

ENV 671a, Temperate Woody Plant Taxonomy and Dendrology
Dendrology literally translates as "the study of trees" and integrates morphology, phenology, ecology, biogeography, and the natural history of tree species. In this course students learn how to identify the major temperate woody plant families, with a focus on North American forest species. In addition, students learn the morphological and ecological traits used for field identification of woody plants. We use phylogenetic systematics as the structure for understanding the evolutionary history and relationships between species. Class periods consist of practical field and laboratory skills used in plant taxonomy and field lecturing. Weather permitting, we are in the field for the majority of class periods. We use an ecosystem focused approach for plant identification. Besides learning how to identify species, we discuss principles of plant ecology, biogeography, and natural history in each of the ecosystems we visit. Limited to thirteen. 3 Course cr

ENV 679a, Plant Ecophysiology
This course focuses on the physiological ecology of plants and their interaction with the biotic and abiotic environment, understood through the lens of first principles. We use a quantitative approach to demonstrate the linkages between photosynthesis, growth, and carbon allocation at the tissue and whole plant level, which can then be scaled up to forests and ecosystems. We also focus on specific physiological and anatomical adaptations plants use to survive in the many varied habitats on Earth. Enrollment limited to twenty-four. 3 Course cr

ENV 685b, Engaging Landholders and Communities in Conserving and Restoring Tropical Forest Landscapes

The design and implementation of sustainable land management strategies in tropical forest landscapes must effectively involve the people and communities who manage and govern these regions. In many cases, however, practitioners design projects that focus on technical solutions only and ignore people altogether, or base their projects upon incorrect assumptions about the people at the heart of their interventions. These trends ultimately lead to project failure and can cause a host of adverse unintended consequences that further exacerbate the problems that practitioners were trying to resolve. This pattern is particularly prevalent with recent pledges by global organizations and national governments to plant trillions of trees around the globe in an effort to address the adverse effects of climate change (The Bonn Challenge and Trillion Trees). While these initiatives are well-intended, they largely ignore the sociocultural and political complexities of the landscapes where the trees would be planted, including whether landholders already plant or protect trees and if they want to increase this practice and how; which species they want to plant or protect and how; and the effects of tree planting on land tenure systems, traditional livelihood strategies, and gender dynamics. Little attention is also given to examining who removed the trees from the landscape and why and whether tree planting is an appropriate solution. 3 Course cr

ENV 688b, Forest Management and Operations

This course provides students with an opportunity to understand many aspects of forest management, especially as it relates to multiple-use forestry. Course content includes understanding and critique of forest inventory, and students are introduced to growth and yield concepts. Forest planning and optimization for objectives such as forest products and carbon are covered. Stewardship of forestland is discussed, as are legal aspects to land ownership and forest conservation. Included are sections focused on forest operations. Students gain experience in the diverse elements and aspects of forest harvesting. The course is taught from the perspective of what a forester should know about harvesting, which includes logging safety, timber harvesting operations and sale administration, legal dimensions of harvesting, planning and maintaining forest access systems, timber procurement and appraisal, logging costs and analysis, and environmental and social influences. Field experiences complement lecture material. 3 Course cr

ENV 692a, Science and Practice of Temperate Agroforestry

This course explores the science and practices of temperate agroforestry, covering current knowledge of agroforestry science and shedding light on the myths and assumptions that have yet to be tested regarding the integration of trees in agricultural systems. The course begins with an overview of modern agriculture to help us better understand why agroforestry systems have potential to improve the sustainability of farming systems. We also cover the social science regarding agroforestry and why it has not been widely adopted. Silvopasture and forest farming systems are the primary focus, but windbreaks, alley cropping, and riparian forest buffers are also covered. The field of agroforestry has struggled with the promotion of hypothetical practices; this course introduces students to real-world production agroforestry systems and helps them better contribute to financially viable and environmentally sound agricultural operations. 3 Course cr

ENV 695a, Yale Forest Forum Series: The Future of Mature and Old-Growth Forests in the US
With the release of Executive Order (EO) 14072 on April 22, 2022, the Biden Administration placed the health and sustainability of the nation's forest at the center of its agenda. The EO calls particular attention to the importance of mature and old-growth (MOG) forests on federal lands, citing their integral role as a natural climate solution and diverse cultural and spiritual significance. Stemming from EO 14072, the Mature and Old Growth Initiative is an ongoing effort by the USDA Forest Service to define, inventory, assess, and conserve MOG across federal lands. In collaboration with the Society of American Foresters (SAF), this seminar focuses on the challenge of fostering healthy and resilience federal forests in a changing climate while continuing to ensure they provide the diverse set of services and values that the public depend upon. Beginning with introductory webinars from Agency leadership and staff, we hear from a series of speakers of different tribes, universities, and non-profits exploring core challenges to this effort, including: how to define MOG, identifying key threats to MOG, the leading science of climate-informed forestry, integrating western and indigenous knowledge, and strategies for meaningful public engagement.

ENV 704a, Workshop on Remote Sensing and Photogrammetry with Drones
A workshop that explores the current state and future outlook of remote sensing with unmanned aerial vehicles (UAVs or drones) for environmental monitoring. UAV-based remote sensing is a rapidly developing field in environmental science and technology. Versatile and inexpensive, it has the potential to offer solutions in a wide range of applications, such as forestry inventory, precision agriculture, flood hazard assessment, pollution monitoring, and land surveys. The class meets once a week for three hours. The workshop is divided into three parts: (1) reviewing the state of the technology on UAV types, sensor configurations, and data acquisition methods; (2) exploring GIS and remote-sensing software tools for analyzing super-high-resolution spectral data acquired by fixed-wing drones; (3) cross-validating drone products against Lidar data and satellite imagery. Students may also have the opportunity to participate in drone flight missions. Data analysis, presentation, literature critique, field trips. Prerequisite: ENV 726 or equivalent experience. 3 Course cr

ENV 705a, Current Topics in Global Climate Change A. Scott Denning
People are currently mining millions of years' worth of stored photosynthetic carbon from the solid Earth and transferring it to the atmosphere, where it is profoundly changing the chemistry, physics, and biology of the atmosphere, land, and oceans. Exchanges with the oceans and land surface have been modified substantially, so that currently only about half of anthropogenic emissions remain in the atmosphere. These "carbon sinks" are poorly understood, contributing a great deal of uncertainty to future climate. We consider biogeochemical and transport processes in land ecosystems, the oceans, and atmosphere as well as anthropogenic emissions. We conclude with a study of changes in carbon cycling in the past and future, including predictions by coupled Earth System Models. 3 Course cr

ENV 707b, Introduction to Environmental Chemistry
Introduction to environmental chemistry and to the nature and behavior of environmental pollutants, including chemical, biological, and physical processes. The fundamental classes of chemical reactions in the environment; critical analysis of chemical data; sampling techniques; analytical methods; natural biogeochemical

controls on environmental chemistry. Case studies examine contaminants of special interest such as acid precipitation, nutrients, and sewage. Prerequisite: college-level general chemistry. 3 Course cr

ENV 712a, Water Management
An exploration of water management at scales ranging from local to global. The course looks at multiple dimensions of the water crisis, including both human and ecosystem impacts; quantity and quality problems; and infrastructural and institutional issues. Theory is illustrated through a variety of case studies. Topics covered include global water resources; flooding; water scarcity; residential, agricultural, and industrial water use; water and health; water justice; impacts of climate change and land-use change; stormwater management; dams and other technologies for water management; human impacts on aquatic ecosystems; water and energy; water economics; water rights; water conflict and cooperation. 3 Course cr

ENV 716b, Renewable Energy Michael Oristaglio
Introduction to renewable energy, including physical principles, existing and emerging technologies, and interaction with the environment. Energy demand; transmission and storage; generation by hydroelectric, wind, solar, biofuel, and geothermal sources, as well as waves and tidal generation. Includes field trips to conventional, hydroelectric, and wind-power facilities in Connecticut. Prerequisites: high school physics, chemistry, and mathematics; college-level science, engineering, and mathematics recommended. 3 Course cr

ENV 723a, Wetlands Ecology, Conservation, and Management
Wetlands are ubiquitous. Collectively they cover 370,000 square miles in the United States and globally encompass more than five million square miles. Most points on a map are less than one kilometer from the nearest wetland. Yet wetlands are nearly invisible to most people. In this course we explore wetlands in all of their dimensions, including the critical services they provide to other systems, the rich biodiversity they harbor, and their impact on global climate. Additionally, wetlands are linchpin environments for scientific policy and regulation. The overarching aim of the course is to connect what we know about wetlands from a scientific perspective to the ways in which wetlands matter for people. 3 Course cr

ENV 726b, Observing Earth from Space Xuhui Lee
A practical introduction to satellite image analysis of Earth's surface. Topics include the spectrum of electromagnetic radiation, satellite-borne radiometers, data transmission and storage, computer image analysis, the merging of satellite imagery with GIS and applications to weather and climate, oceanography, surficial geology, ecology and epidemiology, forestry, agriculture, archaeology, and watershed management. 3 Course cr

ENV 730a, Environmental Data Science in R: Introduction to Data Integration and Machine Learning
In today's world, understanding environmental data and making informed decisions based on it is crucial for addressing complex environmental challenges. This course serves as an introductory exploration into the integration of environmental data using R programming language coupled with machine learning techniques. Participants gain hands-on experience in handling, analyzing, and interpreting environmental datasets,

with a focus on leveraging the power of R for data integration and predictive modeling. 3 Course cr

ENV 731b, Tropical Field Botany
This course teaches students how to identify the most important tropical plant families, with an emphasis on woody taxa. Students learn key characteristics for identification. We concentrate on families that have high economic, ecological, or ethnobotanical importance. We also discuss distribution, habitat, and ecology. The course has a strong practical component, and instructors emphasize vegetative characters to identify families and higher-level taxa. The course includes a two-week field trip to Costa Rica over spring break. Enrollment limited to twelve. 3 Course cr

ENV 734b, Biological Oceanography Mary Beth Decker
Exploration of oceanic ecosystems and how these environments function as coupled physical/biological systems. Ocean currents and other physical processes determine where nutrients are available to support primary production and where organisms from plankton to top predators occur. Includes discussion of anthropogenic impacts, such as the effects of fishing and climate change on marine ecosystems. Recommended prerequisite: college-level biology or ecology course. 3 Course cr

ENV 742b, Fundamentals of Working with People
Environmental scientists and environmental managers are working to transform environmental outcomes by changing institutional and human behavior. Research indicates time and time again that teams are important for tackling these important challenges. From developing research projects to building a business or NGO, teams can lead to better, more efficient output because they incorporate various perspectives and benefit from a wider range of skill sets. But developing and deploying effective teams is an art and a science, full of its own challenges. It requires a deep understanding of self, including one's own strengths, blind spots, priorities, and needs. It also requires reflection, empathy, communication, and collaboration. This course aims to introduce students—particularly scientists and environmental managers—to the theory and practice of team management. Through a series of lectures, simulations, reflections, discussions, and exercises, students will increase their ability to: (1) Understand themselves and other individuals; (2) Form and lead diverse teams; (3) Influence the actions of the organizations within which they are working; (4) Collaborate with others affecting the resources about which they care. 3 Course cr

ENV 744b, Conservation Science and Landscape Planning
This advanced course applies ecological principles to understand and manage biodiversity and attendant ecosystem functioning and services in the anthropocene. The course addresses the ethical and functional basis for conservation and fosters thinking about why and how humans ought to share the planet with nonhuman life. It covers scientific principles such as evolution, life-history and the viability of species, species endangerment and extinction risk, the kinds of biodiversity, the spatial distribution of biodiversity, the functional roles of species in ecosystems, vulnerability and risk assessments, and valuing biodiversity and ecosystem services. The course applies these principles to the exploration of such topics as biodiversity's role in the functioning and sustainability of ecological systems, restoration of environmental damages, conserving biodiversity in dynamic landscapes, adapting landscapes to climate change, balancing conservation with urban development and agriculture, and renewable energy siting. It provides students with the quantitative skills to conduct population viability analyses,

geospatial analyses of the distribution of biodiversity across landscapes, vulnerability analyses, and decision analysis to balance trade-offs among multiple objectives of human land development and biodiversity conservation. Prerequisites: ENV 602 or equivalent course in population or community ecology, F&ES 755 or equivalent course in GIS, and ENV 728 or equivalent course in statistical analysis of biological data. A course in economics or applied math for environmental studies is strongly encouraged. 4 Course cr

ENV 745a, Global Human-Wildlife Interactions
Wildlife and humans have increasingly complex interactions, balancing a myriad of potentially positive and negative outcomes. In a highly interactive format, students evaluate the importance of human-wildlife interactions across diverse ecosystems, exacerbators that influence outcomes, and management interventions that promote coexistence. 3 Course cr

ENV 750a, Writing the World
This is a practical writing course meant to develop the student's skills as a writer. But its real subject is perception and the writer's authority—the relationship between what you notice in the world around you and what, culturally speaking, you are allowed to notice. What you write during the term is driven entirely by your own interest and attention. How you write is the question at hand. We explore the overlapping habitats of language—present and past—and the natural environment. And, to a lesser extent, we explore the character of persuasion in environmental themes. Every member of the class writes every week, and we all read what everyone writes every week. It makes no difference whether you are a would-be journalist, scientist, environmental advocate, or policy maker. The goal is to rework your writing and sharpen your perceptions, both sensory and intellectual. Enrollment limited to fifteen. 3 Course cr

ENV 751b, Sampling Methodology and Practice
This course is intended to provide a fundamental understanding of the principles of statistical sampling, alternative estimators of population parameters, and the design basis for inference in survey sampling. Natural, ecological, and environmental resource applications of sampling are used to exemplify numerous sampling strategies. Sample designs to be studied include simple random; systematic; unequal probability, with and without replacement; stratified sampling; sampling with fixed-radius plots; horizontal point sampling; and line intercept. The Horvitz-Thompson, ratio, regression, and other estimators are introduced and used repeatedly throughout the course. Three hours lecture. Weekly and biweekly problem sets and final project. 3 Course cr

ENV 752a, Ecology and Conservation of Tropical Forests
Tropical forests contain extraordinarily high biological diversity and provide critical ecosystem services with complex interactions with humans. This course focuses on the structure, function, and diversity of intact and degraded tropical forests, with an emphasis on ecological processes that shape plant and animal communities in these unique and diverse ecosystems. We also discuss the major threats to tropical forests, as well as examples of tropical forest recovery following disturbance. The course involves a mix of lectures, classroom activities, and student-led discussions. Students who successfully complete this course are given priority for ENV 717, Tropical Field Ecology (field trip course). 3 Course cr

ENV 753a, Regression Modeling of Ecological and Environmental Data
This course in applied statistics assists scientific researchers in the analysis and interpretation of observational and field data. After considering the notion of a random variable, the statistical properties of linear transformations and linear combinations of random data are established. This serves as a foundation for the major topics of the course, which explore the estimation and fitting of linear and nonlinear regression models to observed data. Three hours lecture. Statistical computing with R, weekly problem exercises. Prerequisite: a course in introductory statistics. 3 Course cr

ENV 755b, Modeling Geographic Space
An introduction to the conventions and capabilities of image-based (raster) geographic information systems (GIS) for the analysis and synthesis of spatial patterns and processes. In contrast to ENV 756, the course is oriented more toward the qualities of geographic space itself (e.g., proximity, density, or interspersion) than the discrete objects that may occupy such space (e.g., water bodies, land parcels, or structures). Three hours lecture, problem sets. No previous experience is required. 3 Course cr

ENV 756a, Modeling Geographic Objects
This course offers a broad and practical introduction to the nature and use of drawing-based (vector) geographic information systems (GIS) for the preparation, interpretation, and presentation of digital cartographic data. In contrast to ENV 755, the course is oriented more toward discrete objects in geographical space (e.g., water bodies, land parcels, or structures) than the qualities of that space itself (e.g., proximity, density, or interspersion). Three hours lecture, problem sets. No previous experience is required. 3 Course cr

ENV 757a or b, Data Exploration and Analysis Ethan Meyers
Survey of statistical methods: plots, transformations, regression, analysis of variance, clustering, principal components, contingency tables, and time series analysis. The R computing language and web data sources are used. 3 Course cr

ENV 758b, Multivariate Data Analysis in the Environmental Sciences
An introduction to the analysis of multivariate data. Topics include multivariate analysis of variance (MANOVA), principal components analysis, cluster analysis, canonical correlation, ordination methods including multidimensional scaling, discriminate analysis, factor analysis, and structural equations modeling. Emphasis is placed on practical application of multivariate techniques to a variety of examples in the natural and social sciences. Students are required to select a dataset early in the term for use throughout the term. There are regular assignments and a final project. Extensive use of computers is required—students may use any combination of R, SAS, SPSS, MINITAB, and STATA. Three hours lecture/discussion. Prerequisites: a prior course in introductory statistics and a good understanding of multiple linear regression. 3 Course cr

ENV 759a, Power, Knowledge, and the Environment: Social Science Theory and Method
Introductory graduate course on the social science of contemporary environmental and natural resource challenges, paying special attention to issues involving power and knowledge. Section I, overview of the course. Section II, disasters and environmental perturbation: pandemics, and the social dimensions of disaster. Section III, power and politics: river restoration in Nepal; the conceptual boundaries of resource systems, and

the political ecology of water in Mumbai Section IV, methods: the dynamics of working within development projects; and a multi-sited study of irrigation in Egypt. Section V, local communities: representing the poor, development discourse, and indigenous peoples and knowledge. The goal of the course is to develop analytic distance from current conservation and development debates and discourse. This is a core course for M.E.M. students in YSE, and a core course in the combined YSE/Anthropology degree program. Enrollment is capped. 3 Course cr

ENV 760b, Conservation in Practice: An International Perspective
This seminar focuses on the practice of wildlife and wildlands conservation, examining key topics from the dual perspectives of academic literature and actual field experiences; bringing together interdisciplinary thinking; and drawing on examples from Africa, Asia, Latin America, and North America. The thematic outline of the seminar is organized around three fundamental questions in nature conservation: What are we trying to save—and why? How is this being done—and how has it changed over time? What lessons are we learning—and what overarching issues remain problematic? Specific topics include how different players define and value wildness; selection and prioritization of conservation targets; comparisons of various species and landscape conservation approaches; and governance and decision-making in conservation, including ties between conservation and development and community-based conservation. During the term, students work in small teams to assess one of several current case studies—integrating biological, social, economic, and governance considerations—to propose an effective path forward for conservation. Participation and leadership are key, as the seminar is discussion-based and approximately 25 percent of the sessions are student-led. Evaluation is based on participation, presentations, and a final paper. 3 Course cr

ENV 761a, Negotiating International Agreements: The Case of Climate Change
This class is a practical introduction to the negotiation of international agreements, with a focus on climate change. Through the climate lens, students explore cross-cutting features of international agreements, the process of international negotiations, the development of national positions, advocacy of national positions internationally, and the many ways in which differences among negotiating countries are resolved. The seminar also examines the history and substance of the climate change regime, including, inter alia, the 1992 UN Framework Convention on Climate Change, the 1997 Kyoto Protocol, the 2009 Copenhagen Accord, the 2015 Paris Agreement, the UAE Consensus, and other recent developments. There are two mock negotiations. 3 Course cr

ENV 762a, Applied Math for Environmental Studies
The language of mathematics is an important leg in the stool of interdisciplinary research and analysis, and many graduate courses at YSE involve mathematical content. However, many graduate students have not taken a math course in years, and their math skills are rusty. Furthermore, many graduate-level mathematical concepts may be entirely new. Experience suggests that many students either opt out of taking courses they are truly interested in or muddle through, struggle with the math, and miss important concepts. AMES is meant to help students refresh or acquire new math skills and succeed in content and "toolbox" graduate-level courses. AMES provides a structured opportunity to learn a range of mathematical concepts used in environmental studies. The course assumes that, at a minimum, students took

college algebra and perhaps a semester of calculus (but might not really remember it). Concepts are presented heuristically in a "how to" and "why" approach with examples from environmental studies. The goal is for students to be conversant and have intuition about (i.e., to demystify) why logs, exponents, derivatives, integrals, linear algebra, probability, optimization, stability analysis, and differential equations show up throughout environmental studies. Students learn (review) how to use these techniques. Also covered is a bit of history of math and an introduction to computer programming. 3 Course cr

ENV 764a, Sociology of Sacred Values: Modernity, Ecology, and Policy
This course equips students to understand how moral culture shapes all environmental issues and management, driving even the most basic decisions that on the surface may appear to be entirely obvious, rational, or scientific. Modern people and modern institutions are propelled toward certain ends and possibilities that are inescapably rooted in questions of human culture about who we are, what we should do, and why it all matters. The first half of the course draws on theoretical readings from sociology, philosophy, and religious studies to understand the ubiquity of sacred codes and how they work, with an emphasis on late modernity, rationality, capitalism, and the sacred/profane. The second half of the course introduces recent case studies to see in practice how moral values are embedded in environmental work, including policy making, advocacy, the free market, scientific research, race and class, death and extinction, ecotourism, and more. Cultivating a lens to see culture and moral values in all things will improve students' applied work in all sectors. 3 Course cr

ENV 767b, Tools for Conservation Project Design and Management
As wildlife and wildland conservation programs have multiplied and grown in size, conservation organizations have sought methods to improve strategic project planning, assessment of progress, cross-project comparison, learning of lessons, and transparency for donors. To address these challenges, major nonprofit organizations have collaboratively designed a set of decision-support tools for planning field projects and programs and for monitoring their progress, summarized in the "Open Standards for the Practice of Conservation" (http://cmp-openstandards.org). Use of these tools has allowed organizations to more clearly articulate strategies, define priority actions, critically assess success, manage adaptively, and derive lessons—all of which help to improve effectiveness. Students in this course explore a mutually reinforcing suite of these project tools: their underlying principles are introduced, students practice the techniques, and current case studies from field conservation are examined to explore tool utility. Students synthesize use of these design tools in a final project design focused on a single case study of their choice. The suite of decision-support tools covered includes situation (logic) models for project design, stakeholder assessments, threats and opportunities analysis, conservation target identification, and monitoring frameworks. Students gain experience in design of projects and their monitoring, as well as familiarity with budgeting. Evaluation is based on class participation, regular assignments, and a final project design paper. 3 Course cr

ENV 771b, Fundamentals of Green Engineering and Green Chemistry
There is a broad desire to ensure that consumer products, manufacturing processes, and material and energy systems are compatible with public health and environmental sustainability. This course provides fundamental knowledge of the frameworks, methods, tools, and techniques of designing for sustainability. Through an

understanding of conceptual contracts and application to real-world case studies, students learn the impacts of design on health (including toxic and ecotoxic effects) and the ways to ensure that new products, processes, and systems can be constructed through the principles of green engineering and green chemistry. This course provides the foundation for more advanced investigations in sustainable design; there are no prerequisites. 3 Course cr

ENV 773a, Air Pollution Control Drew Gentner
An overview of air quality problems worldwide with a focus on emissions, chemistry, transport, and other processes that govern dynamic behavior in the atmosphere. Quantitative assessment of the determining factors of air pollution (e.g., transportation and other combustion-related sources, chemical transformations), climate change, photochemical "smog," pollutant measurement techniques, and air quality management strategies. 3 Course cr

ENV 775b, Federal Indian Law
This course covers the basics of federal Indian law. It does not address the substantive content of tribal law. Tribal law is a specialized study arising from the exercise of the legal authority that the tribes retain. This course is designed to lay the groundwork for a deep understanding of what kinds of sovereignty Indian nations may exercise within the framework of our legal system. Normally, courses of this type begin with an historical exploration of the foundations of the relations between Indian and non-Indian peoples. Instead, we begin with questions that are current and sketch out, roughly, where we are now. Typically, we start with cases pending before or recently decided by the Supreme Court. We use the Marshall Trilogy to build from the present back to the origins to see how the doctrines reflect the positive aspects of the legal expression of contact between Europe and the native nations of the Western hemisphere as well as the more malign aspects. We also situate the doctrinal evolution of federal Indian law with the struggle over colonialism as expressed in the insular cases. We do not neglect the history; it proves critical for understanding the ways in which federal Indian law is *sui generis* in domestic jurisprudence, but we see how that history is always haunted by the specter of colonialism, extra-legality, and finally, international legal norms. Every student must complete the discussion question requirements to sit for the examination or to submit a paper. 3 Course cr

ENV 781b, Applied Spatial Statistics
An introduction to spatial statistical techniques with computer applications. Topics include modeling spatially correlated data, quantifying spatial association and autocorrelation, interpolation methods, variograms, kriging, and spatial point patterns. Examples are drawn from ecology, sociology, public health, and subjects proposed by students. Four to five lab/homework assignments and a final project. The class makes extensive use of the R programming language. Prerequisite: introductory course in statistics is mandatory. An intermediate-level course in statistical modeling and handling spatial data is strongly preferred, but not required. 3 Course cr

ENV 789b, Energy and Development
This course delves into the relationship between energy use and economic development, at a household, national, and global scale. The course provides both a quantitative and qualitative understanding of poverty, energy demand, and the relationship between the two. Students grapple with different income and multidimensional poverty and standard of living indicators, and with GDP and its

limitations as a human development measure. They learn about energy poverty in various parts of the world and about energy consumption patterns with rising income. Students study actual household survey and national statistics data on consumption and energy use, and are exposed to cutting-edge research on standard of living measures and their embodied energy needs. The course covers basic models for household energy transitions and appliance diffusion. This is a seminar course, wherein students are expected to present readings in class. The course involves one term project and presentation, which may be quantitative or qualitative. Prerequisites: basic math, Excel, and microeconomics. Those selecting technical projects should have basic R or other data manipulation skills. 3 Course cr

ENV 793b, Climate Change, Societal Collapse, and Resilience Harvey Weiss
Collapse documented in the archaeological and early historical records of the Old and New Worlds, including Mesopotamia, Mesoamerica, the Andes, and Europe. Analysis of politico-economic vulnerabilities, resiliencies, and adaptations in the face of abrupt climate change, anthropogenic environmental degradation, resource depletion, "barbarian" incursions, or class conflict. 3 Course cr

ENV 795b, Nature as Capital: Merging Ecological and Economic Models
Students learn concepts and develop skills in natural resource economics including thinking about natural resources as capital assets with a specific link to quantitative measures that may be useful in assessing sustainability. Students gain a working knowledge of concepts necessary to apply capital theory to ecosystems and develop a skill set sufficient to build dynamic bioeconomic models that can help them approximate the value of changes in ecosystems. Students also learn computational tools in Excel and Rin dynamic optimization, which are useful for forward-looking decision-making. Application focus on natural resources and conservation questions. 3 Course cr

ENV 796b, Biopolitics of Human-Nonhuman Relations
Advanced graduate seminar on the "post-humanist" turn toward multi-species ethnography. Section I, introduction to the course. Section II, perspectivism: ontological theory and multi-species ethnography; human consciousness and the environment; and mimesis in human-prey relations. Section III, entanglements: translating indigenous knowledge; the history of natural history; and the politics of environmentalism. Section IV, metaphors: non-human imagery in political discourses; and geologic/volcanic imagery. Section V, student selections of readings; and student presentations of their seminar papers. Section VI, conclusion: plants as teachers; and a lecture by the course TF. Three hour lecture/seminar. Enrollment capped. 3 Course cr

ENV 800b, Energy Economics and Policy Analysis
This course examines energy policy issues that pertain to the environment, with a focus on providing tools for analyzing these issues. A primary objective is to apply economics to particular issues of energy markets, environmental impacts, investment in renewables, and other energy issues such as transportation and energy efficiency. We cover the economic and technical considerations behind a particular energy policy issue and then discuss a related article or case study. Prerequisites: ENV 512 (or equivalent background) and at least one course on energy. 3 Course cr

ENV 805a or b, Seminar on Environmental and Natural Resource Economics
This seminar is based on outside speakers and internal student/faculty presentations oriented toward original research in the field of environmental and natural resource economics and policy. Presentations are aimed at the doctoral level, but interested master's students may enroll with permission of the instructors. 1½ Course cr

ENV 807b, Corporate Sustainability: Strategy and Management
This survey course focuses on the policy and business logic for making environmental issues and sustainability a core focus of corporate strategy and management. Students are asked to analyze when and how sustainability leadership can translate into competitive advantage by helping to cut costs, reduce risk, drive growth, and promote brand identity and intangible value. The course seeks to provide students with an introduction to the range of sustainability issues and challenges that companies face in today's fast-changing marketplace. It introduces key corporate sustainability terms, concepts, tools, strategies, and frameworks based on the overarching theory that the traditional profit-maximizing mission of business (often called *shareholder primacy*) is giving way to a new vision of *stakeholder responsibility* that still seeks to provide good returns to the enterprise's owners but also acknowledges obligations to employees, suppliers, customers, communities, and society more broadly. The course combines lectures, case studies, and class discussions on management theory and tools, the legal and regulatory frameworks that shape the business-environment interface, and the evolving role of business in society. It explores how to deal with a world of diverse stakeholders, increasing transparency, and rising expectations related to corporate environmental, social, and governance (ESG) performance. Self-scheduled examination. 3 Course cr

ENV 814a, Energy Systems Analysis
This three-credit lecture course offers an overview of all aspects of energy systems and their interaction with society and the environment. The course provides students with a comprehensive theoretical and empirical knowledge base about energy systems in the world. This course describes and explains the basics of energy and the laws that govern it, the different components of an energy system (supply technologies, delivery systems, and demand), the institutions that govern the energy sectors, the role of energy in development, its impact on climate change, and an understanding of the key challenges of an energy transition towards a sustainable future. The course has a specific emphasis on electricity systems, how they are operated and governed, and how they have to be transformed to tackle climate change. Students receive a unique exposure to energy issues in the Global South. This course provides students with basic analytical tools and knowledge to formulate and solve energy-related decisions at an individual, national, and global scale and to understand and critique ongoing policy dialogues on energy and climate. 3 Course cr

ENV 816a, Electric Utilities: An Industry in Transition
The U.S. electric utility industry is a $400 billion business with capital expenditures on the order of $100 billion per year to replace aging infrastructure, implement new technologies, and meet new regulatory requirements. A reliable electricity infrastructure is essential for the U.S. economy and the health and safety of its citizens. The electric industry also has a significant impact on the environment. In the United States, electric power generation is responsible for about 40 percent of human-caused emissions of carbon dioxide, the primary greenhouse gas. Electric utilities in the United States

are at a crossroads. Technological innovations, improving economics, and regulatory incentives provide a transformational opportunity to implement demand-side resources and distributed energy technologies that will both lower emissions and improve service to customers. Such significant changes could, however, disrupt existing utility business models and therefore may not be fully supported by incumbent utilities. This course focuses on the issues, challenges, risks, and trade-offs associated with moving the U.S. utility industry toward a cleaner, more sustainable energy future. We explore how utilities are regulated and how economic factors and regulatory policies influence outcomes and opportunities to align customer, environmental, and utility shareholder interests to craft win-win-win solutions. 3 Course cr

ENV 817a, Urban, Suburban, and Regional Planning Practice
The built environment in which we live, work, and recreate represents the cumulative impact of government policies and private sector investments implemented at multiple geographic scales over the past several centuries. This course explores the ways in which North American cities and towns have evolved and the dynamic trends facing their urban and suburban neighborhoods. We examine the ways in which past decisions prepare or hinder our communities addressing the big challenges they will face in the coming decades. We delve into the ways that city and regional planning practice is evolving to address current issues such as climate change, demographic shifts, gentrification, sclerotic government, and contested public hearings and realize opportunities such as community resilience, active transportation, eco districts, and participatory planning. 3 Course cr

ENV 821a, Environmental Policy Making: From Local to Global
This course focuses on policy making around environmental issues. We explore and analyze institutions at all levels of government, from community management of forests to global management of greenhouse gas emissions. We also explore a variety of environmental case studies. Students learn to examine issues and institutions through the lens of the actors involved, their incentives, and the information they have. The course includes a simulation taking place over multiple weeks at which students negotiate an international environmental agreement. 3 Course cr

ENV 824b, Environmental Law and Policy
This course provides an introduction to the legal requirements and policy underpinnings of the basic U.S. environmental laws, including the Clean Air Act, Clean Water Act, and various statutes governing waste, food safety, and toxic substances. Students examine and evaluate current approaches to pollution control and resource management as well as the "next generation" of regulatory strategies, including economic incentives, voluntary emissions reductions, and information disclosure requirements. This course investigates mechanisms for addressing environmental issues at the local, regional, and global levels, and explores the intersection between environmental and energy law and policy. Students gain an understanding of overarching legal and policy concepts, such as federalism, administrative procedure, separation of powers, environmental justice, judicial review, and statutory interpretation. 3 Course cr

ENV 834b, Environmental Economics and Policy
This is a course in environmental and natural resource economics and policy. It covers both general methodological principles and specific applications. Rather than serving as a standard course in environmental and natural resource economics, the

material is tailored specifically to master's students pursuing professional degrees in environmental management. The course therefore has a focus on environmental problem solving in the real world. Topics covered include, but are not limited to, evaluation of environmental policies (e.g., standards, taxes, cap-and-trade); cost-benefit analysis and its critiques; nonmarket valuation (ecosystem services, revealed and stated preferences); discounting and macroeconomic perspectives on climate change; management of nonrenewable resources (oil, minerals, etc.); management of renewable resources (forests, fisheries, etc.); land and biodiversity conservation; the relationship between development, trade, and the environment; strategic incentives for international environmental agreements; and environmental behavioral economics. Prerequisite: ENV 512 or equivalent. 3 Course cr

ENV 835a and ENV 835Eb, Seminar on Land Use Planning
Land use control exercised by state and local governments determines where development occurs on the American landscape, the preservation of natural resources, the emission of greenhouse gases, the conservation of energy, and the shape and livability of cities and towns. The exercise of legal authority to plan and regulate the development and conservation of privately owned land plays a key role in meeting the needs of the nation's growing population for equitable housing, energy, and nonresidential development as well as ensuring that critical environmental functions are protected from the adverse impacts of land development. This course explores the multifaceted discipline of land use and urban planning and their associated ecological implications. Numerous land use strategies are discussed, including identifying and defining climate change mitigation and adaptation strategies, including affordable housing, community revitalization, energy development and siting, equitable community engagement, transit-oriented development, building and neighborhood energy conservation, distressed building remediation, jobs and housing balance, coastal resiliency, and biological carbon sequestration. The course also explores how recent events impact these planning issues. The focus is on exposing students to the basics of land use and urban planning, especially in the United States but also internationally, and serving as an introduction for a YSE curricular concentration in land use. Guest speakers are professionals involved in sustainable development, land conservation, smart growth, renewable energy, and climate change management. Some synchronized classes are held online to accommodate guest speakers around the country and outside of the U.S. 1½ Course cr per term

ENV 835Eb, Seminar on Land Use Planning
Land use control exercised by state and local governments determines where development occurs on the American landscape, the preservation of natural resources, the emission of greenhouse gases, the conservation of energy, and the shape and livability of cities and towns. The exercise of legal authority to plan and regulate the development and conservation of privately owned land plays a key role in meeting the needs of the nation's growing population for equitable housing, energy, and nonresidential development as well as ensuring that critical environmental functions are protected from the adverse impacts of land development. This course explores the multifaceted discipline of land use and urban planning and their associated ecological implications. Numerous land use strategies are discussed, including identifying and defining climate change mitigation and adaptation strategies, including affordable housing, community revitalization, energy development and siting, equitable

community engagement, transit-oriented development, building and neighborhood energy conservation, distressed building remediation, jobs and housing balance, coastal resiliency, and biological carbon sequestration. The course also explores how recent events impact these planning issues. The focus is on exposing students to the basics of land use and urban planning, especially in the United States but also internationally, and serving as an introduction for a YSE curricular concentration in land use. Guest speakers are professionals involved in sustainable development, land conservation, smart growth, renewable energy, and climate change management. 1½ Course cr

ENV 836a / ANTH 541a / HIST 965a / PLSC 779a / SOCY 617a, Agrarian Societies: Culture, Society, History, and Development Jonathan Wyrtzen and Elisabeth Wood

An interdisciplinary examination of agrarian societies, contemporary and historical, Western and non-Western. Major analytical perspectives from anthropology, economics, history, political science, and environmental studies are used to develop a meaning-centered and historically grounded account of the transformations of rural society. Team-taught. 3 Course cr

ENV 838b, Life-Cycle Assessment

The increasing concerns about environmental pollution and resource challenges drive the development of sustainable solutions that can meet societal needs without compromising the environment or depleting the resources for future generations. Given many technological, behavioral, and policy options, it is challenging to determine which option best serves humanity and the environment. Life-cycle assessment (LCA) offers a systems approach to support these decisions. This course is an overview of life-cycle thinking, the fundamental theory of LCA framework, and practical applications in supporting real-world decision-making. Students learn state-of-the-art LCA tools, industrial case studies, and advanced LCA methodologies. The course has an emphasis on systems thinking. It is appropriate for all M.E.M. specializations. 3 Course cr

ENV 839b, Power in Conservation

This course examines the anthropology of power, particularly power in conservation interventions in the global South. It is intended to give students a toolbox of ideas about power in order to improve the effectiveness of conservation. Conservation thought and practice are power-laden: conservation thought is powerfully shaped by the history of ideas of nature and its relation to people, and conservation interventions govern and affect peoples and ecologies. This course argues that being able to think deeply, particularly about power, improves conservation policy making and practice. Political ecology is by far the best known and published approach to thinking about power in conservation; this course emphasizes the relatively neglected but robust anthropology of conservation literature outside political ecology, especially literature rooted in Foucault. It is intended to make four of Foucault's concepts of power accessible, concepts that are the most used in the anthropology of conservation: the power of discourses, discipline and governmentality, subject formation, and neoliberal governmentality. The important ethnographic literature that these concepts have stimulated is also examined. Together, theory and ethnography can underpin our emerging understanding of a new, Anthropocene-shaped world. This course will be of interest to students and scholars of conservation, environmental anthropology, and political ecology, as well as conservation practitioners and policy makers. It is a required course for students in the combined YSE/Anthropology doctoral degree program. It

is highly recommended for M.E.Sc. students who need an in-depth course on social science theory. M.E.M. students interested in conservation practice and policy making are also encouraged to consider this course, which makes an effort to bridge the gap between the best academic literature and practice. Open to advanced undergraduates. No prerequisites. Three-hour discussion-centered seminar. 3 Course cr

ENV 840a / GLBL 7170, Climate Change Policy and Perspectives
This course examines the scientific, economic, legal, political, institutional, and historic underpinnings of climate change and the related policy challenge of developing the energy system needed to support a prosperous and sustainable modern society. Particular attention is given to analyzing the existing framework of treaties, law, regulations, and policy—and the incentives they have created—which have done little over the past several decades to change the world's trajectory with regard to the build-up of greenhouse gas emissions in the atmosphere. What would a twenty-first-century policy framework that is designed to deliver a sustainable energy future and a successful response to climate change look like? How would such a framework address issues of equity? How might incentives be structured to engage the business community and deliver the innovation needed in many domains? While designed as a lecture course, class sessions are highly interactive. Self-scheduled examination. 3 Course cr

ENV 850a, International Organizations and Conferences
This course focuses on the historic, present, and future roles of international environmental conferences. Through guest speakers, assigned readings, and discussions, students explore conferences including IUCN's World Conservation Congress, the UN's Convention on Biological Diversity, UNFCCC's climate change conference, the UN Environment Programme (UNEP), and the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). Students, along with visiting alumni and guest speakers, discuss the roles and impacts of the various conferences in international environmental decision-making and the future of international conferences in a post-COVID world. The course also assesses the potential for improved equity, justice, and inclusion in international conferences, organizations, and their secretariats. Students attending fall conferences (in person or virtually) develop work plans to be completed during the conference under the guidance of their host delegations and the instructor. 3 Course cr

ENV 852b, Food Systems and Environmental Law
We eat food every day. The food system, from agricultural production to processing and distribution to consumption and waste, shapes our lives. Less well known, but of equal or greater impact, are the effects the food system has on our environment, climate, and public health. This course takes the food one eats in a day and uses it to demonstrate the environmental impact of modern agriculture and the U.S. laws that attempt to reduce those harms. Today's industrial food system bears little relation to the bucolic family farms we imagine—and that were in Congress's mind when it passed most modern environmental laws. Since the 1970's when most environmental laws were enacted, U.S. agriculture has grown increasingly concentrated and industrial. In terms of output of cheap food, the system is a success: we now produce about 60% more food than we need, food is about one-third less expensive today than in 1980; and less than 2% of U.S. employment is in agriculture. In addition, agriculture now also produces about 10% of the nation's vehicle fuel. On the other hand, the increased industrialization, without the environmental safeguards applicable to other

industries, has led to agriculture being a major source of environmental and health harm. Agriculture occupies approximately 60% of the country's contiguous land and thus is the main driver of loss of native habitats. Almost 800 million acres of U.S. land are used for pasture or range for livestock, which often destroy habitat, imperil native species, and pollute waters. Most row crops are monocultures dependent on high doses of fertilizers and pesticides that pollute waters and endanger workers, surrounding communities, and downstream consumers. The vast majority of our meat is produced in industrial-scale "concentrated animal feeding operations" that house thousands or even millions of animals producing more waste than many cities, yet without sewage treatment systems, and thus cause significant water and air pollution. Agriculture is responsible for about 20% of the country's greenhouse gas emissions and the food system as a whole contributes over a third of total greenhouse gas emissions. At the end of the system, approximately 35% of food is wasted, and most of that ends up in landfills where it releases methane. U.S. environmental law directly and indirectly seeks to reduce these harms, although often in partial, ineffective, or unenforceable ways. While there are alternative production systems that have been demonstrated to produce sufficient food with much less environmental impact, the law rarely encourages, and often discourages, such approaches. This course studies existing U.S. environmental law and its strengths and weaknesses and explores alternative approaches to environmental and public health protections. We start and end with climate change—its impact on agriculture and agriculture's impact on climate—and address other impacts and statutes between. Several short papers and in-class presentations, as well as a final paper are required for all students. Students who write a longer paper for Substantial Paper credit may earn a third unit. Paper required. Enrollment limited to eighteen. Application required. 2 Course cr

ENV 857b, Financing Climate Change Adaptation in Developing Countries
This course is intended for students who are interested in applied work in development organizations or public institutions focused on nature, climate, energy and waste that are involved in catalyzing finance for climate change adaptation, particularly in the global south. The course has no specific prerequisites but students will find that courses in development economics, natural resources management, finance and law are helpful. The class entails in-class discussions where students are expected to critically analyze course content, discuss and debate, as well as present material. Enrollment is limited to fifteen. 3 Course cr

ENV 860a, Developing Environmental Policies and Winning Campaigns
This course is about what makes an environmental policy idea successful—one that can go from concept to law, get implemented well, and achieve its intended goals. In addition, this class covers how to develop and run effective campaigns to win environmental policies. Good policy does not just happen. It takes creative thinking, learning from experience and history, and an ability to "look around corners" to help ensure that your idea can actually be well implemented, won't have unintended consequences, and will actually solve the problem you set out to alleviate. And, once you have a honed policy idea, there is no magic wand that will turn it into the law of the land. Whether in city hall, the state legislature, the U.S. Congress, or a corporate boardroom, many stakeholders will have a hand in determining whether an idea turns into a law. 3 Course cr

ENV 878a, Climate and Society: Past to Present Michael Dove
Seminar on the major traditions of thought and debate regarding climate, climate change, and society, drawing largely on the social sciences and humanities. Section I, overview of the course. Section II, disaster: the social origins of disastrous events; and the attribution of societal "collapse" to extreme climatic events. Section III, causality: the revelatory character of climatic perturbation; politics and the history of efforts to control weather/climate; and nineteenth–twentieth-century theories of environmental determinism. Section IV, history and culture: the ancient tradition of explaining differences among people in terms of differences in climate; and cross-cultural differences in views of climate. Section V, knowledge: the study of folk knowledge of climate; and local views of climatic perturbation and change. Section VI, politics: knowledge, humor, and symbolism in North-South climate debates. The goal of the course is to examine the embedded historical, cultural, and political drivers of current climate change debates and discourses. This course can be applied towards Yale College distributional requirements in Social Science and Writing. The course is open to both graduate and undergraduate students. Enrollment capped. 3 Course cr

ENV 884a, Industrial Ecology
The principal objective of industrial ecology is to reorganise the industrial system so that it evolves towards a mode of operation that is compatible with the biosphere and is sustainable over the long term" (Erkman 2017). To achieve this ambitious objective, the field of Industrial Ecology takes a systems perspective and draws analogies between industrial systems and ecology. Industrial Ecologists study (1) the flows of materials and energy in industrial and consumer activities, (2) the effects of these flows on the environment, and (3) the influences of economic, political, regulatory, and social factors on the flow, use, and transformation of resources (White 1994). This course will introduce the foundations and applications of key tools of the field: Material Flow Analysis (MFA), Life Cycle Assessment (LCA), Environmentally-Extended Input-Output Analysis (EEIO), and Industrial Symbiosis (IS). Strategic applications of these tools can provide insight for a wide range of decisionmakers with sustainability aims. The overall goals of the course are to define and describe Industrial Ecology; to demonstrate the relationships among production, consumption, sustainability, and Industrial Ecology in diverse settings and at multiple scales; to show how industrial ecology serves as a framework for the consideration of environmental and sustainability-related aspects of science, technology, and policy; and to gain an understanding of the tools, applications, and implications of Industrial Ecology 3 Course cr

ENV 892a, Introduction to Planning
This course offers an exploration of contemporary planning practice in the United States through the introduction of foundational planning principles and the different planning subfields that the profession now encompasses. Through academic research, readings that reveal the practical challenges and political realities each subfield faces, and discussion, the course seeks to clarify and explain the general structure and process inherent in practicing the planning profession. Additionally, the individual planning subfields—transportation and infrastructure planning, housing and the built environment, economic development, community planning and advocacy, sustainability and the environment, and general practice—are explored to further understand these specialized skill sets and how collaborations among them lead to the

creation and implementation of more robust planning decisions. The course consists of lecture classes alternating with case study discussion groups. 3 Course cr

ENV 894a, Green Building: Issues and Perspectives
Buildings have an outsized impact on human and environmental health. The building sector is the largest contributor to greenhouse gas emissions globally, responsible for almost 40 percent of total emissions. Construction and demolition activities generated 600 million tons of waste in 2018 in the United States, more than twice what was generated in municipal solid waste. Buildings represent an enormous opportunity to reduce environmental impact, and the movement that represents this approach is commonly called green building. But green building is broad and deep—involving process, products, and policy—and crisscrosses many disciplines. This course examines green building from a variety of perspectives, placing it in a technical, social, financial, and historical context. The task of reducing the environmental impact of our buildings requires cross-disciplinary integration and touches nearly every aspect of our lives as occupants and managers of interior spaces. Individual topics in green building—such as building science, indoor environmental quality, innovative finance, and public- and private-sector programs—are covered through research, class discussion, guest lectures, field trips, and group projects. Great emphasis is placed on the practical challenges and opportunities that green building presents to building and non-building professionals working together to design, specify, construct, operate, renovate, and finance our nation's buildings. Enrollment limited to fifteen. 3 Course cr

ENV 898a, Environment and Human Health
This course provides an overview of the critical relationships between the environment and human health. The class explores the interaction between health and different parts of the environmental system including weather, air pollution, greenspace, environmental justice, and occupational health. Other topics include environmental ethics, exposure assessment, case studies of environmental health disasters, links between climate change and health, and integration of scientific evidence on environmental health. Students learn about current key topics in environmental health and how to critique and understand scientific studies on the environment and human health. The course incorporates lectures and discussion. 3 Course cr

ENV 900a, Doctoral Student Seminar and Responsible Conduct of Research
This course provides the foundation for doctoral study at the School of the Environment. Students learn what it means to do scholarly research as well as become adept with philosophy of science and research methodology and proposal writing, as a basis for exploring diverse approaches to formulating and addressing research questions. Students work with their advisers to put these concepts and principles into practice to develop the basis for their dissertation research (including building bibliography, identifying and crafting research questions, formulating research hypotheses, and drafting a research proposal). Students further learn about funding opportunities and procedures for submitting grants. The course also covers professional ethics and responsible conduct of research, including ethical approaches to inquiry and measurement, data acquisition and management, authorship and publication, peer review, conflicts of interest, mentoring, collaborative research, and animal and human subjects research. Finally, the course explores ethical ways to advocate for the application of scholarly knowledge in the interest of environmental problem solving. Weekly assigned readings support concepts and issues addressed in class. Students

present their embryonic research ideas in class and use feedback from the group to further develop their ideas. 3 Course cr

ENV 902a, Environmental Anthropology Colloquy
A biweekly seminar for Dove doctoral advisees and students in the combined YSE/Anthropology doctoral program. Presentation and discussion of grant proposals, dissertation prospectuses, and dissertation chapters; trial runs of conference presentations and job talks; discussion of comprehensive exams, grantsmanship, fieldwork, data analysis, writing and publishing, and the job search; and collaborative writing and publishing projects. 3 Course cr

ENV 905a, Doctoral Seminar in Environmental and Energy Economics
This course is designed to bring doctoral students up to speed on the latest developments in the literature on environmental and energy economics. Key papers are presented, and associated mathematical and empirical methods are covered. Topics include uncertainty and climate change policy, estimating energy demand, electricity markets, and behavioral economics and the environment. A focus is on identifying areas that deserve future research attention. Open to advanced master's students with permission of the instructor. 3 Course cr

ENV 910b, Survival Skills for Finishing Doctoral Students
This course is aimed at preparing advanced doctoral students for successful and rewarding careers in ecology and environmental science. Students learn about academic and non-academic careers from readings of and presentations by scientists in those positions. Students identify important steps toward planning and launching their career paths, and skills for being effective in these positions; and they develop their own career plan, curriculum vitae, teaching and research plans, and critiques of professional webpages. Finally, the course exposes students to resources and opportunities for continuing to apply and polish their skills. Pass/Fail.

ENV 951b, Strategic Environmental Communication
Strategic communication is a powerful means of achieving an organization's mission, especially when informed by insights into human behavior and social systems. By the end of this course, students are able to develop communication strategies and apply insights from the social and behavioral sciences to improve the effectiveness of their communication campaigns. Enrollment limited to twelve. 3 Course cr

ENV 953b, Sustainable Business Capstone Consulting Clinic
The intended outcome of this course is to provide you with a 'capstone' experience; consulting to an organization in its early formative years, confronting real-life challenges at the intersections of starting-up, business strategy, and environmental sustainability; all with regular contact with the Founder/Founding team of an entrepreneurial venture started by recent alumni or current student Founders. The course is designed for you to apply tools and insights gained in this and other courses to a defined project; creating deliverables that will be useful to the entrepreneurs leading their organization. It is designed to help prepare anyone who wishes to become a consultant after graduation; though it is also intended to be useful for those that intend to engage with consultants in their careers post-Yale and may be considering becoming an entrepreneur themselves. In short, there is hopefully something in it for many of you! Enrollment by Application. 3 Course cr

ENV 954a, Management Plans for Protected Areas
A seminar that comprises the documentation of land use history and zoning, mapping and interpretation, and the collection and analysis of socioeconomic, biological, and physical information for the construction of management plans. Plans are constructed for private smallholders within the Quiet Corner Initiative partnership managed by the Yale School Forests. In the past, plans have been completed for the Nature Conservancy; Massachusetts Trustees of Reservations; town land trusts; city parks and woodlands of New Haven, New York, and Boston; and the Appalachian Mountain Club. Ten days fieldwork. Enrollment limited to twenty. Must also register for ENV 957, Field Skills in Land Stewardship. Prerequisite: ENV 659 or permission of the instructor. 3 Course cr

ENV 955a or b, Seminar in Research Analysis and Communication in Forest Ecology
A seminar for students in their second year working on research projects. Students start by working through the peer-review publication process. They identify the scope and scale of the appropriate journal for their work. They then work on their projects, which comprise data and projects in applied forest ecology. Discussions involve rationale and hypothesis testing for a project, data analysis techniques, and reporting and interpretation of results. It is expected that manuscripts developed in the course are worthy of publication and that oral presentations are of a caliber for subject-area conferences and meetings. Extensive training in writing and presenting work is provided. 1 credit option is available for incoming students only. Must be taken for 3 credits to count as a capstone course. Limited to twelve.
Prerequisite: ENV 659 or permission of the instructor. 3 Course cr

ENV 956b, Strategies for Land Conservation
This is a professional seminar on private land conservation strategies and techniques, with particular emphasis on the legal, financial, and management tools used in the United States. The seminar is built around presentations by guest speakers from land conservation organizations. Speakers are assigned topics across the land conservation spectrum, from identification of target sites, through the acquisition process, to ongoing stewardship of the land after the deal is done. The tools used to protect land are discussed, including the basics of real estate law, conservation finance, and project/organization management. Students are required to undertake a clinical project with a local land conservation organization. Enrollment limited to twenty-five; preference to second-year students if limit reached. 3 Course cr

ENV 957a, Field Skills in Land Stewardship
An intensive technical and field ecology seminar that is taught in combination with ENV 954. In this course students learn field skills that contribute to the base set of information used in assessment, planning, prescription writing, and management of forest and open space. Students learn to identify plants; interpret surficial geology, soils, and hydrology; and read the land for use history. Assessments learned in a series of field exercises comprise forest health and invasive surveys, wildlife habitat evaluations, and soil surveys and wetland delineation. This culminates in understanding and developing a site classification. Lastly, students learn field inventory and sampling techniques in data collection for soils, geology, plants, and wildlife habitat. 3 Course cr

ENV 959a, Clinic in Climate Justice and Public Health
In the course, interdisciplinary student teams carry out applied projects at the intersection of climate justice, law and public policy, and public health. Each team works with a partner organization (e.g., state agency, community organization, other nongovernmental organization) to study, design, and implement a project, typically through community-based participatory research practices. The course affords the opportunity to have a real-world impact by applying concepts and competencies learned in the classroom. This course should be of interest to graduate and professional students across the University and is open to Yale College juniors and seniors. In addition, this course is one of the options available to students to fulfill the practice requirement for the M.P.H. degree at YSPH and the capstone requirement for the M.E.M. degree at YSE. Students who plan to enroll must complete an application, which will be used to match each student with a clinic project. Check the course's Canvas site or contact the instructor for more information. Prerequisite: EHS 547 or permission of the instructor. Not open to auditors. 3 Course cr

ENV 966a, Sustainability Implementation: Change Management in Institutional Settings Sara Smiley Smith and Lindsay Crum
Yale's formal sustainability efforts are nearing the two-decade mark, with the Office of Sustainability established in 2005, but the work to make the campus more sustainable has been going on far longer. From sending food scraps to pig farmers in the 1800s, to responding to energy crises and crashes with infrastructure changes, to establishing early recycling programs in the 1980s, the University's work has deep roots, if not always the comprehensive impact some would desire. This YSE Capstone course provides students with the opportunity to learn about this long history of effort to improve the University's sustainability and engage in the real act of change management in current efforts on campus. Exploring change management theory and learning from many on campus experts, students work in groups, bringing a diversity of experiences and knowledge to the table to tackle real and wicked problems in our midst. In taking on these timely projects, students have the opportunity to tangibly impact Yale's ongoing efforts to fully embrace sustainable operations while experiencing the friction, joy, disappointment, learning, and challenge that are all part of working to make real change happen. 3 Course cr

ENV 971b, Land Use Clinic
The Land Use Clinic gives students the opportunity to explore a variety of specific land use topics that are of current concern and relevance to the field, to the curriculum, and to society, including renewable energy, natural resources, rural-based land uses, watershed management, agriculture, and sustainable urban planning. In our rapidly changing political environment, strategies that focus on the local level are increasingly more important to achieving our global sustainability goals. Students work with the clinic professor and practitioners in the field to develop papers, research memoranda, and publications on a selected topic. The clinic professor and guest speakers conduct skill-based workshops focused on the tools and techniques needed to pursue a career in community land use planning. Some synchronized classes are held online to accommodate guest speakers around the country and outside of the U.S. The clinic includes a field trip over spring break and is available by application only. Applications are available at the beginning of the fall semester, and selections are made no later than November 1. 3 Course cr

ENV 975b, Western Lands and Communities Field Clinic: Research to Practice
This project-based course is for students engaged in social research, humanities study, natural science, and/or conservation management and policy in Western U.S. landscapes. The Spring 2024 version of the course focuses heavily on helping students excel in the writing and publishing process. The course counts toward the MEM capstone if desired. There is a mandatory spring field trip (expenses generously covered by YSE) for experiential learning, research, and writing in the Rocky Mountain West during the second week of spring break. Western lands and communities face growing ecological, economic, and social equity problems that require integrated solutions. Students complete a self-driven writing project throughout the term. At the end of the term, they submit it for publication to an outlet fit to their field of study and career goals (i.e., scholarly journal, book press, reputable news media, audio/video script-writing, etc.). The course is capped and requires an application. No preference is given to a particular field of study. Strong preference is given to students with ongoing writing projects or new ideas that are refined. 3 Course cr

ENV 982b, Green Engineering and Sustainable Design
Study of green engineering, focusing on key approaches to advancing sustainability through engineering design. Topics include current design, manufacturing, and disposal processes; toxicity and benign alternatives; policy implications; pollution prevention and source reduction; separations and disassembly; material and energy efficiencies and flows; systems analysis; biomimicry; and life cycle design, management, and analysis. 3 Course cr

Modules

ENV 001a, Self to System
Students work to gain the tools needed to thoughtfully design and maximize an impactful path through YSE, Yale University, and to their careers and lives beyond Yale. Students work through their own personal motivations and variety of lived experience. This MOD is designed to help students appreciate themselves and those around them and prepare them to maximize their time at YSE. 0 Course cr

ENV 002a, Science to Solutions
Students work to understand different strategies for knowing how to collect primary data; how to evaluate evidence; how to generate, visualize, and communicate alternative solutions; and how to iterate, monitor, and adaptively manage solutions. Students then opt into one of two pathways: A New Haven experience or Yale-Myers Forest experience. 0 Course cr

THE FOREST SCHOOL

The Forest School at the Yale School of the Environment is the oldest continuous professional graduate forestry school in the nation. For over 120 years, Yale's forestry program has been at the forefront of developing approaches to the practice of forestry, generating knowledge about forests, and promoting the values forests bring to people's livelihoods and well-being.

Forestry has been at the heart of the school since its inception in 1900, when it was founded as The Yale Forest School by Gifford Pinchot and Henry S. Graves, with founding gifts from both individuals and the Pinchot family. From the beginning, The Yale Forest School has found its home in Marsh Hall at the top of Science Hill. During its first four decades, the school graduated the first four chiefs of the U.S. Forest Service; created the first field experience for incoming students (MODs) at Grey Towers, the Pinchot family home in Milford, Pennsylvania; and was gifted its first research and demonstration forest in 1908, which now comprises six forests that cover over 11,000 acres combined. In 1921, the school changed its name to the Yale School of Forestry, a name that changed again in 1972 to the Yale School of Forestry & Environmental Studies. In July 2020, the name changed to the Yale School of the Environment; at the same time, the school established The Forest School at the Yale School of the Environment in recognition of the school's founding mission and the continued importance of forestry.

VISION AND MISSION

After its establishment, The Forest School approved its Vision and Mission to guide the school into the future.

Vision

We seek to lead in advancing science and educating professionals to develop collaborative research, policy, and practice that address vital and compelling issues facing forests and people globally. We strive to do so justly and equitably, elevating a diversity of voices, and in respectful relationships with the land and one another.

Mission

Rooted in place-based experiential learning and rigorous research, The Forest School within the Yale School of the Environment educates scientists and practitioners to apply forest ecology and social dynamics in their work around the globe. We are a hub for connecting forests and people across disciplines, cultivating collaborations, initiatives, and research that underscore the importance of forests within the broader environmental field. As a school community, we train leaders in the field to be systems thinkers with dynamic and adaptive expertise, developing sustainable solutions for the critical challenges of our time.

The Forest School is guided by its Management Team, which is composed of core staff and faculty, as well as leaders from affiliated YSE centers, programs, and initiatives. These individuals are committed to oversight of The Forest School and the forestry curriculum as well as (1) collectively implementing the vision and mission; (2)

strategic direction of academics, research, and affiliated centers and programs; and (3) developing programming for the school.

FOREST-RELATED EDUCATION AND YSE COMMUNITY ENGAGEMENT

The Forest School has a dedicated core faculty, including twelve endowed professorships committed to forestry in perpetuity. TFS also prescribes the curricula of the forestry degrees granted by YSE, including a Master of Forestry (MF), which is accredited by the Society of American Foresters and is intended for students wishing to pursue professional careers in the management and policy of forest resources, and a Master of Forest Science (MFS), which is designed for students wishing to conduct scientific research that contributes toward basic and applied knowledge. Doctoral degrees are managed by YSE, though doctoral students work with TFS-related faculty on cutting-edge forest related research in a five-year, fully funded program.

Our education and training activities are rooted in place-based knowledge of the U.S. Northeast—centering applied forest ecology and social sciences—with a global scope spanning a spectrum of forest landscapes and societies. The Forest School offers numerous experiential learning opportunities for students, including field trips, stakeholder and community engagement, on-the-ground research at multiple local and international sites, and a summer forest apprenticeship. The summer apprenticeship, known as Forest Crew, is a twelve-week program held each summer at Yale-Myers Forest that trains students in forest management and land stewardship. TFS also offers an urban apprenticeship program through the Urban Resources Initiative's GreenSkills program where students help plant trees and care for New Haven's urban forests.

TFS also manages Yale Forests, which are used for teaching and training. Yale Forests cover nearly 11,000 acres in seven separate forests across New England, providing educational and research opportunities focusing on science-based management to promote ecological regeneration. At 7,840 acres, Yale-Myers is the largest of the seven school-managed forests and the single largest piece of property used for educational purposes by Yale University.

TFS also serves as a hub for researchers and practitioners in forest-related fields worldwide, bringing together the best science and practices to find solutions to the challenges that face the world's forests and people today. The school's cross-disciplinary research informs the practices and solutions collaboratively developed for students, faculty, and centers, programs, and initiatives. Programs for practitioners, land stewards, and YSE students are offered through the centers and programs that call The Forest School home, including the Environmental Leadership & Training Initiative (ELTI), The Forests Dialogue (TFD), Tropical Resources Institute (TRI), Urban Resources Initiative (URI), Yale Applied Science Synthesis Program (YASSP), and Yale Forests.

The Yale Forest Forum

The Yale Forest Forum (YFF), founded in 1994, is the convening body and the events hub of The Forest School serving as an outreach arm to the world. YFF serves as a forum for engagement, learning, and discussion on the most pressing topics and challenges related to forests and forest landscapes today. Over the past two years, YFF

has hosted some of the largest virtual events at Yale; for instance, in collaboration with *Orion* magazine, Yale Forum on Religion and Ecology, and Yale Environmental Humanities, TFS has been hosting an author-speaker series exploring environmental humanities, nature writing, and human relationships with forests.

The YFF guest speaker series is the longest continuously running speaker series at the Yale School of the Environment. Participants come from a wide range of organizations and perspectives, including government, NGOs, academia, and businesses, working at scales from local to international. YFF has transformed the speaker series into semester-long themed public webinars and a student seminar for credit; this past year's topics included: "Understanding Climate-Smart Forestry in Practice" and "Tribal Forestry: Understanding Current Issues and Challenges." Learnings from these series are published in the *YFF Review*.

Student Interest Groups

Student Interest Groups (SIGs) also have long history and relationship with The Forest School. Yale's chapter of the International Society of Tropical Foresters (ISTF) was first founded in 1989 as part of a global network of forestry and natural resource practitioners and professionals focused in the tropics. Highlighting the intersectionality of tropical forestry, students across disciplines, programs, and degrees participate in the group. Yale ISTF is best known for its annual conference, which is the longest running student-organized conference at Yale. In 2024, ISTF held its thirtieth annual conference, which was themed "Integrating Climate Change and Biodiversity for Resilient Tropical Forests: A Holistic Approach." Yale ISTF has also served as a hub for the global ISTF network, which dissolved in the 1990s but is now reforming, in part based on the Yale chapter's enduring model.

The Yale Temperate Foresters (YTF) includes Yale student members of the Society of American Foresters, the Forest Stewards Guild, and other professional associations focused on North America's temperate forests. YTF serves as a hub for forest-focused students, with longstanding traditions of attending the Society of American Foresters annual national convention, harvesting holiday trees from Yale-Myers Forest, and social events.

Centers and Programs

Forestry-affiliated YSE centers and programs include:

Environmental Leadership & Training Initiative Born out of The Forest School, ELTI empowers people to design and implement land use practices that conserve and restore tropical forests and native tree cover in human-dominated landscapes.

Forest Fellows Program The Forest School is home to a cohort of postgraduate forestry students who continue their learning and training through short-term positions and receive mentorship from staff and faculty. This program further allows graduates to refine their skills and enter the job market with enhanced experience.

The Forests Dialogue TFD provides international leaders in the forest sector with an ongoing, multi-stakeholder dialogue platform and process focused on developing

mutual trust, shared understanding, and collaborative solutions for sustainable forest management and conservation.

Tropical Resources Institute TRI supports interdisciplinary, problem-oriented masters and doctoral student research on the most complex challenges confronting the conservation and management of tropical environments and natural resources worldwide.

Urban Resources Initiative Recognized for tree planting and greenspace restoration, URI is a nonprofit and a program of The Forest School dedicated to community forestry, environmental education, and training and capacity building activities in New Haven.

Yale Applied Science Synthesis Program Centered on generating science to support decision making, YASSP produces quantitative, reputable, scientific syntheses that guide and inform land management for pragmatic stewardship of forest and agricultural lands.

Yale Forests Yale Forests is The Forest School's home for teaching, learning, and researching in the field. The Yale Forests cover nearly 11,000 acres in seven forests across the U.S. Northeast. In addition to providing educational and research opportunities, we use science-based management to promote the ecological regeneration of the areas of the forests that are harvested for timber to balance conservation, research, and harvesting goals over the long-term. Special programs of Yale Forests include the Quiet Corner Initiative, Maple Education & Extension Program, and the Northeast Forest Farmers Coalition.

CENTERS AND PROGRAMS AT THE SCHOOL OF THE ENVIRONMENT

Teaching, research, and outreach at the Yale School of the Environment are greatly enhanced by the centers and programs that have been initiated by faculty over the years. The centers and programs, each with a different concentration, are a key component of a student's learning experience. They allow students to gain hands-on clinical and research experience through funded student internships and projects, coordination of faculty research in areas of common interest, and creation of symposia, conferences, newsletters, and outreach programs.

Centers and programs are funded primarily through private foundations, nongovernmental organizations, state and federal agencies, international granting agencies, and private corporations. The nature and number of centers and programs evolve over time, reflecting faculty and student interest. Under the current organizational structure, each program falls under the umbrella of a center, which enables further collaboration and resource sharing.

CENTERS

Center for Green Chemistry and Green Engineering at Yale

https://greenchemistry.yale.edu

The Center for Green Chemistry and Green Engineering is integrated across three Yale schools: the School of the Environment, the School of Arts and Sciences, and the School of Engineering and Applied Sciences. It is a unique academic community spanning multiple disciplines, including chemistry, chemical and environmental engineering, materials science, environmental studies, biology, toxicology, health sciences, and policy. The center's mission is to advance the science and practice of green chemistry and engineering as a means to create a more sustainable future. It achieves this by fostering collaboration among researchers, educators, and students from diverse fields.

Center for Industrial Ecology

https://cie.research.yale.edu

The Yale Center for Industrial Ecology (CIE) features an interdisciplinary, international team with backgrounds in environmental, social, and policy sciences, engineering, and management. Researchers at CIE study the stocks, flows, and transformations of physical resources in systems at various scales, from materials and products to factories, cities, and globally. The center is dedicated to developing and promoting research, teaching, and outreach in industrial ecology. It aims to understand and improve the sustainability of industrial systems and their interaction with the environment.

Environmental Leadership and Training Initiative

https://elti.yale.edu

The Environmental Leadership and Training Initiative (ELTI) aims to build capacity for conserving and restoring tropical forest landscapes in ways that support biodiversity and livelihoods. ELTI offers applied, action-oriented training and follow-up leadership support to accelerate conservation and restoration actions. The training program includes place-based, experiential field courses in five primary countries and online courses for a global audience. By empowering people from various sectors and backgrounds, ELTI seeks to foster effective strategies for tropical forest landscape conservation and restoration.

Hixon Center for Urban Sustainability

https://hixon.yale.edu

The Hixon Center for Urban Sustainability provides a collaborative forum for scholars, students, and practitioners to improve urban ecosystem management. It is committed to applying theory in practice and bridging scientific knowledge with practical solutions. The center focuses on creating vibrant, healthy, and equitable cities through integrated research, teaching, and outreach. Its work contributes to advancing sustainable urban ecosystems in the United States and around the world.

Justice, Equity, Diversity, and Sustainability Initiative

https://jedsi.yale.edu

The Justice, Equity, Diversity, and Sustainability Initiative (JEDSI) explores the relationship between social inequalities, lived experiences, and environmental outcomes. JEDSI currently focuses on eight primary areas: Nature, Outdoor Experiences, Attitudes, and Perceptions; Environmental Inequalities, Resilience, and Sustainability; Food and Farming: Access, Sovereignty, Food Justice; Institutional Diversity, Transparency, and Workforce Dynamic; Diversity Pathway Programming; New Horizons in Conservation Conference; and Mentoring and Profiles of Environmental Professionals of Color. It seeks to examine and address the complex interplay between social and environmental issues. Through research, teaching, and practice, JEDSI aims to foster a more just and sustainable future..

The SEARCH Center: Solutions for Energy, Air, Climate, and Health

https://search-center.yale.edu

The SEARCH Center (Solutions for Energy, Air, Climate, and Health) aligns scientific research and technology with the EPA's goals of protecting human health and the environment. Based at Yale University, the center involves a collaboration with Johns Hopkins University and researchers from several other institutions. It focuses on addressing the challenges related to energy, air quality, climate change, and public health. The SEARCH Center's interdisciplinary approach aims to develop innovative solutions to complex environmental problems.

The Forests Dialogue

https://theforestsdialogue.org

The Forests Dialogue (TFD) provides a platform for international leaders in the forest sector to engage in ongoing multi-stakeholder dialogue. TFD aims to develop mutual trust, a shared understanding, and collaborative solutions for sustainable forest management and conservation. It has expanded its focus to include all actors across the landscape, not just the forest sector. Hosted by Yale University, TFD seeks to reduce conflict among stakeholders over the use and protection of vital forest resources.

Tropical Resources Institute

https://tri.yale.edu

The Tropical Resources Institute's mission encompasses research, training, and networking. It supports interdisciplinary student research on the conservation and management of tropical environments and resources. The institute trains students to be leaders in this field by bridging natural and social sciences with theory and practice. It provides a forum to connect Yale's initiatives in applied research, partnerships, and programs in the tropics.

Ucross High Plains Stewardship Initiative

https://highplainsstewardship.com

The Ucross High Plains Stewardship Initiative (UHPSI) promotes land stewardship and conservation in the American West. It mentors students on applied research and management projects in collaboration with Western partners. UHPSI's interdisciplinary projects address conservation challenges in the region. Students gain knowledge and skills in natural resource management and Western issues through the initiative's experiential learning framework.

Urban Resources Initiative

https://uri.yale.edu

The Urban Resources Initiative (URI) is a partnership between a nonprofit and the university, focusing on community participation in urban ecosystem management. It recognizes that sustainable management relies on local residents' meaningful participation. URI facilitates this participation, including working with neighborhood leaders and interns to restore local lands. The program aims to empower communities in managing urban ecosystems.

Yale Applied Science Synthesis Program

https://synthesis.yale.edu

The Yale Applied Science Synthesis Program (YASSP) connects researchers, policymakers, and land managers to address applied questions on land management's impact on ecosystem services. The program collaborates with partners to inform sustainable land management practices. YASSP's work emphasizes the regional context of local management decisions to maximize ecosystem benefits. It focuses on services such as carbon storage, sustainable food production, and biodiversity.

Yale Center for Business and the Environment

https://cbey.yale.edu

The Yale Center for Business and the Environment (CBEY) is a hub for creating sustainable solutions to challenges facing human and natural systems. CBEY aims to inspire and accelerate the transition to a just and thriving world by connecting people, ideas, and resources. It fosters business and cross-sector solutions to global challenges. The center's mission is to support the development of innovative approaches to environmental sustainability.

Yale Center for Environmental Communication

https://environment.yale.edu/research/centers/environmental-communication

The Yale Center for Environmental Communication (YCEC) researches the factors influencing environmental attitudes and behavior. It engages the public in environmental science and solutions through various initiatives, including Yale Environment 360 and Yale Climate Connections. YCEC aims to build public and political will for environmental solutions. It supports a global network of organizations working toward this goal.

Yale Center for Environmental Justice

https://ycej.yale.edu

The Yale Center for Environmental Justice (YCEJ) is a collaboration between the Yale School of the Environment and Yale Law School. YCEJ empowers frontline communities to lead change by expanding research, teaching, and practice in environmental justice. It promotes an expanded definition of environmental justice that recognizes interconnected systemic inequities. YCEJ hosts events, including the Global Environmental Justice Conference, to bring together scholars, practitioners, and activists.

Yale Center for Environmental Law and Policy

https://envirocenter.yale.edu

The Yale Center for Environmental Law and Policy (YCELP) is a joint initiative between Yale Law School and the Yale School of the Environment. YCELP advances rigorous approaches to environmental decision-making across disciplines and scales. It fosters collaboration on environmental law and policy issues and facilitates a joint-degree program for law students. The center provides opportunities for research, education, career development, and social engagement.

Yale Forest Forum

https://yff.yale.edu

The Yale Forest Forum (YFF) is the special events hub of The Forest School at the Yale School of the Environment. YFF hosts a weekly speaker series with diverse perspectives from government, NGOs, businesses, and academia. The series covers a range of topics

related to forest management and conservation. Each series culminates in the YFF Review, summarizing the talks and key learnings.

Yale Program on Climate Change Communication

https://climatecommunication.yale.edu

The Yale Program on Climate Change Communication conducts research on public knowledge, attitudes, and behavior regarding climate change. It engages the public in partnership with various organizations through initiatives like Yale Climate Connections. The program aims to understand and influence the factors that shape public responses to climate change. It seeks to inform and engage the public in climate science and solutions.

PARTNERSHIPS

The School of the Environment is a multidisciplinary learning center with tremendous resources, both within and outside the School. The school is engaged in partnerships that range from alliances with other Yale programs and schools to formal agreements with many external organizations and universities. These relationships enrich the school and add important dimensions to the YSE learning experience.

Within Yale

Yale Center for Natural Carbon Capture (https://naturalcarboncapture.yale.edu)

Yale Institute for Biospheric Studies (https://yibs.yale.edu)

Yale Peabody Museum (https://peabody.yale.edu)

Yale Planetary Solutions Project (https://planetarysolutions.yale.edu)

Outside of Yale

The School of the Environment has partnership agreements with numerous local, national, and international organizations beyond the Yale campus. The following are a few examples of these arrangements.

New York Botanical Garden (https://www.nybg.org)

Cary Institute (https://www.caryinstitute.org)

The Nature Conservancy (https://www.nature.org)

USDA Forest Service (https://www.fs.usda.gov)

ADMISSIONS: MASTER'S DEGREE PROGRAMS

The Yale School of the Environment offers four two-year master's degrees: the professionally oriented Master of Environmental Management (M.E.M.) and Master of Forestry (M.F.), and the research-oriented Master of Environmental Science (M.E.Sc) and Master of Forest Science (M.F.S.).

LEARNING ABOUT YSE

The best way to learn about the School is to visit YSE virtually or in person before submitting an application. The Office of Admissions offers both virtual and on-campus programs throughout the year. We encourage prospective students to attend our events for the most comprehensive view of YSE. Participants will meet students, faculty, and staff to become familiar with the School's mission and goals, degree requirements and courses, opportunities for research and applied projects, career development, and life at Yale. YSE faculty and staff also conduct outreach events online, around the United States and abroad, including at graduate school fairs, hosting virtual and off-campus information sessions, and visiting schools and universities. To learn if a representative will be coming to your area and to complete the required registration for our events, please visit the Admissions Events page at https://apply.environment.yale.edu/portal/main-event-page.

Campus visits are pre-scheduled events that you can register for on our Admissions Events page. You can also connect with our admissions staff online by scheduling a one-on-one meeting on the appointment page: https://apply.environment.yale.edu/portal/schedule_appointment. Individual appointments and campus visits outside of the scheduled times may be possible, subject to staff availability. Please note that weekend visits are not available. If you are interested in observing a class, please get in touch with faculty members directly via email. The class schedule for each term is posted at http://environment.yale.edu/courses.

The admissions website, http://environment.yale.edu/admissions, has extensive information about the School. Should you have additional questions, our admissions staff is happy to assist you by email, phone, and virtual/in-person appointment. The admissions office can be reached at admissions.yse@yale.edu or by telephone at 800.825.0330.

APPLICATION PROCEDURES

The application form for admission to the YSE professional and research master's degrees (M.E.M., M.E.Sc., M.F., or M.F.S.) may be found at https://apply.environment.yale.edu/apply. This form includes complete instructions for the application requirements. Learn more about our master's degree application requirements at https://environment.yale.edu/admissions/masters-admissions/how-apply-masters-programs.

Questions concerning admission or the application process should be directed to admissions.yse@yale.edu or 800.825.0330. Students may enter YSE and begin their studies in the fall term only. Please see our How to Apply page for key dates and the

deadline for master's application consideration at https://environment.yale.edu/admissions/masters/apply.

Previous applicants to YSE must submit a new application form, an updated résumé/curriculum vitae, and updated research statements where applicable. Some materials, such as official transcripts sent directly from conferring institutions, may be transferred to your new application. Please contact Quetcy Rivas Maldonado, master's program coordinator, at quetcy.maldonado@yale.edu with any questions.

PREPARATION FOR ADMISSION

To excel in their program of study at YSE and a career in environmental management, all M.E.M. students must be conversant in four foundational knowledge areas. These areas are physical science, human science, ecology, and microeconomics.

Each fall term, four thoughtfully designed courses—tailored specifically for incoming M.E.M. students—are offered for students to learn, refresh, and deepen their understanding of these knowledge areas. Students form a strong foundation to engage with the rigorous M.E.M. curriculum and approach complex problems through an interdisciplinary lens.

For incoming students with substantial academic or professional experience in any of these four areas, waiver exams are available each summer preceding enrollment at YSE. Students may make two attempts to pass a waiver exam. Students who can demonstrate sufficient proficiency in a foundational knowledge area by passing an exam will receive a waiver for that course.

The registrar will auto-enroll students who do not take or pass a waiver exam to complete the required foundational knowledge course(s). These courses must be completed during a student's first fall term:

ENV 511	Ecological Foundations for Environmental Managers
ENV 512	Microeconomic Foundations for Environmental Managers
ENV 521	Physical Science Foundations for Environmental Managers
ENV 522	Human Science Foundations for Environmental Managers

Foundational Knowledge Preparation

The following are some examples of recommended undergraduate courses that will help prepare incoming students for the MEM curriculum:

PHYSICAL SCIENCE

- Earth science course covering geosphere, atmosphere, and hydrosphere
- Hydrology
- Soil science
- Environmental chemistry
- Climate science

HUMAN SCIENCE

- Environmental Governance
- Environmental Anthropology

- Environmental History
- Environmental Justice
- Environmental Sociology
- Human Geography
- Political Ecology
- Religion and Ecology

ECOLOGY

- General Ecology
- Biodiversity Science
- Population or Community Ecology
- Ecosystem Science or Ecosystems Ecology

MICROECONOMICS

- A course in Principles of Microeconomics

APPLICATION REQUIREMENTS

Candidates for admission must hold a four-year baccalaureate degree or an equivalent international degree and are required to provide the following materials:

1. A completed online application form.
2. A résumé/curriculum vitae. Indicate full- or part-time for each job/internship/volunteer position.
3. A combination of short essays and longer statements that illustrate fit, skills, and overall experience.
4. *One transcript or mark sheet from each college and/or university attended* with grades for each course, including study abroad and transfer institutions. Official transcripts are not required during application but will be required if admitted and an applicant plans to enroll. All transcripts submitted during the application process must include the applicant's name and institution (not to be added by the applicant). Applicants who have completed a degree outside the United States or Canada are strongly encouraged to submit an evaluation of their transcripts. If submitting a transcript evaluation, applicants should use World Education Services (https://www.wes.org), or Educational Credential Evaluators (http://ece.org) for course-by-course or ICAP evaluation of all transcripts (undergraduate and graduate). Those who secure WES or ECE evaluations should submit their official transcripts directly to WES or ECE, not the Office of Admissions. An additional copy of the transcript beyond the official evaluation is not required. Evaluations must be received in the Office of Admissions by the application deadline to be considered complete. The applicant is strongly encouraged to begin this process early, as evaluations can take over a month to complete.
5. Three letters of reference (academic and/or professional). Submission of the recommendation form and a one- to two-page letter is expected for each reference. Please note that we cannot accept additional recommendations beyond the required three. It is strongly recommended that the applicant submit at least one academic letter of reference.

6. Standardized test score reports. *The submission of GRE, GMAT, or LSAT scores is optional at this time.* An official TOEFL or IELTS score report if English is not a native or customary language of instruction (copies will not be accepted). Applicants must achieve at least a 100 on the iBT version of the TOEFL or a 7.0 on the IELTS examination (minimum of 6.5 in each section) to be given full consideration for admission. See additional information on requirements related to English as a second language below.
7. There is no application fee at this time.
8. If applying to the M.E.Sc. or M.F.S. program, please include a list of three potential advisers on the application form. As an addendum to the research statement, please provide a short paragraph for each listed adviser describing why you would like them to serve as your intended research adviser. Please include how your research interests align and how they may advise you on your project.

Note: Additional documents beyond those aforementioned will not be reviewed and may be discarded at the end of the admissions cycle.

All application materials should be uploaded to the electronic application form. Materials cannot be returned, copied, or forwarded to third parties.

All applicants must hold a bachelor's degree and demonstrate satisfactory academic achievement. There are no arbitrary standards or cutoffs for test scores or grade-point averages, except for English language ability (TOEFL and IELTS). Letters of reference from individuals who can evaluate the applicant's scholarship, professional activities, leadership skills, and career goals are especially valuable. Letters from undergraduate professors and/or professional supervisors are preferred. The School looks for students capable of making effective contributions to scientific knowledge or professional service in addressing environmental problems. Special weight is given to relevant experiences obtained after graduation from college. Clarity regarding professional career goals is critically important in the applicant's personal statement. Faculty review teams read the applications submitted to the master's degree programs, and final admissions decisions rest on an integrated assessment of the components described above.

ENGLISH AS A SECOND LANGUAGE TRAINING REQUIREMENT

Applicants for whom English is not a native or customary language of university instruction must take the Test of English as a Foreign Language (TOEFL) or the International English Language Testing System (IELTS). We require a minimum TOEFL score of 100 on the exam. A minimum overall score of band 7.0 is required on the IELTS, with a minimum of 6.5 in each section. Please note that we will only accept the iBT version of the TOEFL examination. When taking either test, applicants should indicate the School's Institution Code Number 3996; no department code is necessary. Additional information about TOEFL can be found at www.ets.org/toefl. Information about IELTS can be found at www.ielts.org. The testing service will send official test results directly to the School and generally take two to three weeks to arrive.

Applicants required to submit the TOEFL or IELTS must also submit a supplemental essay (300 words maximum) detailing all educational, research, and/or work and internship experience related to the English language. As a condition of acceptance, it may be required that applicants for whom English is a second language, whose

undergraduate degree work has not been conducted in English, or whose application suggests such a need, complete a six-week instructional program in written and spoken English conducted by Yale Summer Session. More information will be provided to those students who may qualify for this requirement.

BEKENSTEIN CLIMATE LEADERS PROGRAM

Application Requirements

The Bekenstein Climate Leaders Program is a competitively awarded scholarship that is open to Yale School of the Environment students with substantive lived, academic, and/or professional experience or a clear vision for a future working in advancing climate solutions and climate change mitigation.

APPLICATION DEADLINE

The Bekenstein Application is due with a student's master's application (https://environment.yale.edu/admissions/masters/apply).

Program Benefits and Resources

With the mission of training those who will lead the world toward a sustainable future, the Bekenstein Climate Leaders Scholarship is offered by the Yale School of the Environment (YSE) to master's students who demonstrate strong potential to advance climate solutions. Applicants from a diversity of experiences and perspectives are sought. Their skills may include the ability to motivate others to achieve results, to examine complex problems like climate change from an interdisciplinary perspective, to apply a systems perspective in order to avoid unanticipated consequences, and to evaluate potential actions through an environmental justice lens. Applicants are evaluated based on their leadership potential or demonstrated leadership experience as well as their proven commitment to advancing climate solutions. In addition to completing the regular application for all potential YSE master's students, candidates must also complete a supplemental application and participate in a virtual interview if requested.

Prospective students applying to the incoming cohort must complete the regular master's application for all potential YSE master's students, and complete the supplemental application for the Bekenstein Climate Leaders Program.

For application details and requirements, please see the Bekenstein Climate Leaders Program Frequently Asked Questions at https://environment.yale.edu/admissions/masters/funding-your-degree/bekenstein-climate-leaders.

THREE CAIRNS CLIMATE PROGRAM FOR THE GLOBAL SOUTH

With the mission of training those who will lead the world toward a sustainable future, the Three Cairns Climate Scholarship for the Global South is offered by the YSE to full-time master's students who demonstrate strong potential to advance climate solutions in the Global South. This transformative program is aimed at expanding the corps of outstanding environmental leaders throughout the Global South by reducing the barriers to advanced environmental education and training, supporting them to return to their home regions with the comprehensive training needed for success, and

fostering a network of these alumni leaders to advance the climate solutions necessary to safeguard local natural resources, advance their economies, and secure a sustainable future.

Application Requirements

Eligible candidates must possess primary citizenship from a country in the Global South, possess professional and/or academic experience relevant to climate solutions, and have substantive lived, academic, and/or professional experience. In addition to completing the regular application for all potential YSE master's students, candidates must also complete a supplemental application and participate in a virtual interview if requested.

APPLICATION DEADLINE

The Three Cairns Application is due with a student's master's application: https://environment.yale.edu/admissions/masters/apply

Program Benefits and Resources

The program provides scholars with tuition and non-tuition resources. The program enables YSE to meet 100 percent of the demonstrated tuition need for qualified students from the Global South admitted as master's degree students through the Three Cairns Scholars Program. As Three Cairns Scholars, students also will have access to non-tuition resources, such as English-language support before arrival on campus, funding to support summer internships in their home countries, mentoring partnerships with YSE alumni, and career development opportunities and counseling that are designed to help ensure their success while at Yale and when they return to their home countries and regions.

Upon graduation from YSE, Three Cairns Scholars will also be eligible to receive $10,000-per-year stipends for two years to help support their return to their home countries and regions to engage in environmental work.

For application details and requirements, please see the Three Cairns Climate Program For the Global South Frequently Asked Questions (https://environment.yale.edu/admissions/masters/funding-your-degree/three-cairns-climate-program-global-south-faqs).

ADMISSIONS: DOCTORAL DEGREE PROGRAM

The doctoral program is designed to develop the broad knowledge, analytical powers, technical skills, and creative thinking demanded of leaders in environmental and natural resources disciplines. Applicants should hold a bachelor's or master's degree in a field related to their intended program of study as expressed in the application.

APPLICATION PROCEDURES

The Doctor of Philosophy (Ph.D.) degree is administered jointly by the Yale School of the Environment and the Yale Graduate School of Arts and Sciences.

Applications for the Ph.D. program can be obtained from the website of the Yale Graduate School of Arts and Sciences at https://gsas.yale.edu/admission. The application deadline for the Ph.D. program is January 2, 2025. Doctoral education involves a close pairing between the student and a faculty adviser. Before applying to the doctoral program, applicants must identify and contact one or two faculty members who would serve as their major adviser if accepted to the program.

The Graduate Record Examination (GRE) General Test is optional. Applicants should ask their prospective advisers whether or not they wish to see the scores. For more information on the GRE, visit www.ets.org/gre. The Test of English as a Foreign Language (TOEFL) is required of all applicants whose native language is not English. This requirement is waived only for applicants who, prior to matriculation at Yale, will have received a baccalaureate degree or its international equivalent from a college or university where English is the primary language of instruction. The applicant must have studied in residence at the baccalaureate institution for at least three years to receive a waiver. If you do not qualify for a waiver but have taken the TOEFL within the past two years, you will need to have your TOEFL scores released to the Yale Graduate School of Arts and Sciences (code 3987). The International English Language Testing System (IELTS) may be substituted for the TOEFL. For more information and the latest updates on the TOEFL and IELTS, visit www.ets.org/toefl and www.ielts.org.

TUITION, FEES, AND OTHER EXPENSES

Master's Program Tuition and Fees

The 2024–2025 tuition for master's degrees (M.E.M., M.F.S., M.E.Sc., and M.F.) is $51,250. Tuition for special students is based on the number of courses taken. The school reserves the right to revise tuition as it deems appropriate. Tuition does not include hospitalization/specialty insurance as required by the university, or materials fees charged by other schools and departments in the university.

Two-year master's students must pay full tuition for two years, regardless of the number of courses taken.

For 2024–2025, a single student should also anticipate for the nine-month academic year estimated expenses of $530 for books, course materials, supplies, and equipment; $1,600 for transportation; $3,112 for medical insurance; $15,060 for living expenses; $4,578 for personal expenses; $375 for the mandatory Student Activity Fee; and $135 for the mandatory Student IT Fee.

Ph.D. Program Tuition and Fees

The 2024–2025 tuition for the Ph.D. program is $49,500. Most doctoral students receive a school fellowship that covers the cost of their tuition and provides a twelve-month stipend for the first five years of their program. For 2024–2025, the stipend is $49,538. Doctoral students must pay a nominal continuous registration fee (CRF) for no more than three years thereafter.

Registration

All students in the master's programs must register for courses using the online registration system (the Yale Hub, https://yub.yale.edu) within the registration period for the fall and spring terms. If a student withdraws from a course by midterm, then the transcript does not show that the student has been enrolled in the course. If a student withdraws from a course after midterm but before the first day of reading period (whether or not that particular course observes reading period), the transcript records the course and shows the designation "W" (Withdrew). International students should be aware that their visa status requires them to maintain 12 credits per term, with the exception of their last term at YSE with permission from OISS (Office of International Students and Scholars). See the academic calendar for specific dates.

International students are required to complete a nonacademic registration at the Office of International Students and Scholars prior to their regular academic registration.

Tuition Fees for Special Students

The tuition charge for special students is 25 percent of tuition for one course, 50 percent for two courses, 75 percent for three courses, and full tuition for four or more courses for each term of attendance.

Continuous Registration

Master's degree students who wish to pursue their research through a six-month or one-year internship are permitted to do so and are considered enrolled on a full-time basis (student is entitled to continue membership in Yale Health and defer student loans). Upon return, the student will be enrolled as a full-time student and pay tuition for the period needed to complete the degree requirements. Students can not register for regular coursework, or work as a teaching assistant, while on continuous registration status. The fee for continuous registration is $3,250 per term. Students are permitted to be on continuous registration for a maximum of two terms.

Tuition Deposit

Upon acceptance of admission, a deposit of $500 payable directly to the Yale School of the Environment is required to hold a place in the entering class. If a decision is made not to matriculate, the deposit will not be refunded.

Tuition Rebate and Financial Aid Refund Policy

On the basis of the federal regulations governing the return of federal student aid (Title IV) funds for withdrawn students, the rebate and refund of tuition are subject to the following policy.

1. For purposes of determining the refund of Title IV funds, any student who withdraws from the School of the Environment for any reason during the first 60 percent of the term will be subject to a pro rata schedule that will be used to determine the amount of Title IV funds a student has earned at the time of withdrawal. A student who withdraws after the 60 percent point has earned 100 percent of the Title IV funds. In 2024–2025, the last days for refunding Title IV funds will be November 4, 2024, in the fall term and March 29, 2025, in the spring term.
2. For purposes of determining the refund of institutional aid funds and for students who have not received financial aid:
   a. 100 percent of tuition will be rebated for withdrawals that occur on or before the end of the first 10 percent of the term: September 9, 2024, in the fall term and January 23, 2025, in the spring term.
   b. A rebate of one-half (50 percent) of tuition will be granted for withdrawals that occur after the first 10 percent but on or before the last day of the first quarter of the term: September 25, 2024, in the fall term and February 7, 2025, in the spring term.
   c. A rebate of one-quarter (25 percent) of tuition will be granted for withdrawals that occur after the first quarter of a term but on or before the day of midterm: October 23, 2024, in the fall term and March 3, 2025, in the spring term.

   d. Students who withdraw for any reason after midterm will not receive a rebate of any portion of tuition.
3. The death of a student shall cancel charges for tuition as of the date of death, and the bursar will adjust the tuition on a pro rata basis.
4. If the student has received student loans or other forms of financial aid, funds will be returned in the order prescribed by federal regulations; namely, first to Federal Direct Unsubsidized Loans, if any; then to Federal Direct Graduate PLUS Loans; next to any other federal, state, private, or institutional scholarships and loans; and, finally, any remaining balance to the student.
5. Recipients of federal and/or institutional loans who withdraw are required to have an exit interview before leaving Yale. Students leaving Yale receive instructions on completing this process from Yale Student Financial Services.

Student Accounts and Billing

Student accounts, billing, and related services are administered through the Office of Student Accounts, which is located at 246 Church Street. The office's website is http://student-accounts.yale.edu.

The Student Account is a record of all the direct charges for a student's Yale education such as tuition, room, board, fees, and other academically related items assessed by offices throughout the university. It is also a record of all payments, financial aid, and other credits applied toward these charges.

Students and student-designated proxies can view all activity posted to their Student Account in real time through the university's online billing and payment system, YalePay (https://student-accounts.yale.edu/yalepay). At the beginning of each month, email reminders to log in to YalePay to review the Student Account activity are sent to all students at their official Yale email address and to all student-designated YalePay proxies. Payment is due by 4 p.m. Eastern Time on the last day of the month.

Yale does not mail paper bills or generate monthly statements. Students and their authorized proxies can generate their own account statements in YalePay in pdf form to print or save. The statements can be generated by term or for a date range and can be submitted to employers, 401K plans, 529/College Savings Plans, scholarship agencies, or other organizations for documentation of the charges.

Students can grant others proxy access to YalePay to view student account activity, set up payment plans, and make online payments. For more information, see Proxy Access and Authorization (https://student-accounts.yale.edu/understanding-your-bill/your-student-account).

The Office of Student Accounts will impose late fees of $125 per month (up to a total of $375 per term) if any part of the term bill, less Yale-administered loans and scholarships that have been applied for on a timely basis, is not paid when due. Students who have not paid their student account term charges by the due date will also be placed on Financial Hold. The hold will remain until the term charges have been paid in full. While on Financial Hold, the university will not provide diplomas and reserves the right to withhold registration or withdraw the student for financial reasons.

PAYMENT OPTIONS

There are a variety of options offered for making payments toward a student's Student Account. Please note:

- All bills must be paid in U.S. currency.
- Yale does *not* accept credit or debit cards for Student Account payments.
- Payments made to a Student Account in excess of the balance due (net of pending financial aid credits) are not allowed on the Student Account. Yale reserves the right to return any overpayments.

Online Payments through YalePay

Yale's recommended method of payment is online through YalePay (https://student-accounts.yale.edu/yalepay). Online payments are easy and convenient and can be made by anyone with a U.S. checking or savings account. There is no charge to use this service. Bank information is password-protected and secure, and there is a printable confirmation receipt. Payments are immediately posted to the Student Account, which allows students to make payments at any time up to 4 p.m. Eastern Time on the due date of the bill, from any location, and avoid late fees.

For those who choose to pay by check, a remittance advice and mailing instructions are available on YalePay. Checks should be made payable to Yale University, in U.S. dollars, and drawn on a U.S. bank. To avoid late fees, please allow for adequate mailing time to ensure that payment is received by 4 p.m. Eastern Time on the due date.

Cash and check payments are also accepted at the Office of Student Accounts, located at 246 Church Street. The Cashier's Office is open Monday through Friday from 8:30 a.m. to 4:30 p.m.

Yale University partners with Flywire, a leading provider of international payment solutions, to provide a fast and secure way to make international payments to a Student Account within YalePay. Students and authorized proxies can initiate international payments from the Make Payment tab in YalePay by selecting "International Payment via Flywire" as the payment method, and then selecting the country from which payment will be made to see available payment methods. International payment via Flywire allows students and authorized proxies to save on bank fees and exchange rates, track the payment online from start to finish, and have access to 24/7 multilingual customer support. For more information on making international payments via Flywire, see International Payments Made Easy at https://student-accounts.yale.edu/paying-your-bill/payment-options.

A processing charge of $25 will be assessed for payments rejected for any reason by the bank on which they were drawn. In addition, for every returned ACH payment due to insufficient funds made through YalePay, Flywire will charge a penalty fee of $30 per occurrence. Furthermore, the following penalties may apply if a payment is rejected:

1. If the payment was for a term bill, late fees of $125 per month will be charged for the period the bill was unpaid, as noted above.
2. If the payment was for a term bill to permit registration, the student's registration may be revoked.

3. If the payment was given to settle an unpaid balance in order to receive a diploma, the university may refer the account to an attorney for collection.

YALE PAYMENT PLAN

A Yale Payment Plan provides parents and students with the option to pay education expenses monthly. It is designed to relieve the pressure of lump-sum payments by allowing families to spread payments over a period of months without incurring any interest charges. Participation is optional and elected on a term basis. The cost to sign up is $50 per term.

Depending on the date of enrollment, students may be eligible for up to five installments for the fall and spring terms. Payment Plan installments will be automatically deducted on the 5th of each month from the bank account specified when enrolling in the plan. For enrollment deadlines and additional details concerning the Yale Payment Plan, see https://student-accounts.yale.edu/paying-your-bill/yale-payment-plan.

BILL PAYMENT AND PENDING MILITARY BENEFITS

Yale will not impose any penalty, including the assessment of late fees, the denial of access to classes, libraries, or other facilities, or the requirement that a student borrow additional funds, on any student because of the student's inability to meet their financial obligations to the institution, when the delay is due to the delayed disbursement of funding from VA under chapter 31 or 33.

Yale will permit a student to attend or participate in their course of education during the period beginning on the date on which the student provides to Yale a certificate of eligibility for entitlement to educational assistance under chapter 31 or 33 and ending on the earlier of the following dates: (1) the date on which payment from VA is made to Yale; (2) ninety days after the date Yale certifies tuition and fees following the receipt of the certificate of eligibility.

Interruption or Temporary Suspension of University Services or Programs

Certain events that are beyond the university's control may cause or require the interruption or temporary suspension of some or all services and programs customarily furnished by the university. These events include, but are not limited to, epidemics or other public health emergencies; storms, floods, earthquakes, or other natural disasters; war, terrorism, rioting, or other acts of violence; loss of power, water, or other utility services; and protest disruptions, strikes, work stoppages, or job actions. In the face of such events, the university may, at its sole discretion, provide substitute services and programs, suspend services and programs, or issue appropriate refunds. Such decisions shall be made at the sole discretion of the university.

Master's Program Financial Aid

POLICIES AND PROCEDURES

In general, students must apply for financial aid in order to be considered for a YSE scholarship. Since financial aid awards are based primarily on financial need,

information about student finances that is not available in the application for admission is required. YSE is need-blind. Therefore, applying for financial aid and having financial need in no way affect the decision to offer admission.

The deadline for prospective students to apply for need-based financial aid is February 1. If that deadline is missed, the student will not be considered for need-based financial aid. This can be a costly oversight, as what is received in the second year is generally the same as what is received in the first year. The deadline for current students to apply for financial aid renewal is March 31.

If a student is a U.S. citizen or permanent resident, three forms must be submitted, the YSE Financial Aid Application, the Free Application for Federal Student Aid (FAFSA), and the CSS Profile. If a student is an international student, two forms must be submitted, the YSE Financial Aid Application and the CSS Profile. Several scholarships may have a separate component that must be completed within the admissions application and accompany the financial data (i.e., Three Cairns Climate Program for the Global South, Bekenstein Climate Leaders Program). Students must reapply for financial aid for the second year, although the amount of the YSE scholarship in most cases will remain the same as in the first year.

A limited number of merit-based scholarships are available, for which a separate financial aid application may be required (i.e., Bekenstein Climate Leaders Program). Examples include merit awards to the top applicants to the Master of Environmental Science and Master of Forest Science programs, Bekenstein Climate Leaders Program, and the Paul D. Coverdell Fellowships for qualifying Returned Peace Corps Volunteers.

YSE scholarships, work study, and federal loans (Direct Stafford and Grad PLUS) are available to U.S. citizens and permanent residents. YSE scholarships, work study, and Yale International Loans are available to international students.

The primary factor in determining the amount of a need-based YSE scholarship is financial need as determined by the review of the student's (and spouse's, if applicable) income and assets and any third-party funding that the student expects to receive. Merit is a secondary factor.

Students *must* report any direct financial support that they expect to receive from third-party sources, including but not limited to outside scholarship and employer reimbursement. Student must also report any direct financial support that they expect to receive from their parents, such as money for tuition or rent.

Approximately three-quarters of YSE students receive scholarships in any given year from an annual scholarship budget in excess of $8 million.

Satisfactory Academic Progress

To be eligible for financial aid, a student must be making Satisfactory Academic Progress (SAP) in the degree program. Financial aid includes all federal student aid funds (Federal Direct Stafford Loan, Federal Direct Grad PLUS Loan, and/or Federal Work Study) as well as institutional funds. For a complete explanation of the YSE SAP policy, please see the YSE Student Handbook, chapter Rules & Regulations, section Academic Regulations and Policies.

Less Than Half-Time Enrollment, Including Continuous Registration

Students enrolled less than half-time (i.e., for less than 6 credits in a term) and students who are not actively working toward a degree, such as those in continuous registration status, are not eligible for federal or institutional financial aid. Furthermore, financial aid awards are based on an assumption of full-time enrollment and will be revised proportionately should a student choose to enroll less than full-time. Students considering enrolling less than full-time should first consult with the the registrar and the associate director of financial aid to understand the academic and financial consequences, respectively, of that decision.

Joint-Degree Students

In most joint-degree programs, students split their time between the two joint schools, spending one and one-half years at each school for a total program length of three years.

Each school at Yale is financially independent, which means that the financial aid award a student receives at one school is not transferable to the joint school. The joint-degree student should follow the financial aid application procedures of the school to which the student will be paying tuition. If the student is paying tuition at YSE, the student should apply for financial aid through YSE. If the student is paying tuition at the joint school, the student should apply for financial aid through that school.

If the joint-degree student is applying for admission to two schools simultaneously, the student should apply for financial aid at both schools, also simultaneously.

Fifth-Year Students

During their senior year at Yale College, students may apply for admission to the YSE Five-Year Program. These students sometimes defer their enrollment in the YSE master's program for a year of outside volunteer work or employment. To be considered for financial aid for their enrollment at YSE, these students must submit their financial aid application materials by the February 1 deadline prior to their matriculation into the program. This could mean that the student submits the financial aid application materials during the student's deferral or "gap" year. It is the student's responsibility to submit all documents by the February 1 deadline.

Scholarships

Most of the school's scholarship budget is funded by private donors. Scholarship recipients are automatically considered for all named scholarships. The named scholarships listed below are *not* in addition to any generic scholarship a student receives in the financial aid award notification but may be matched to a scholarship recipient once the student matriculates.

The school is delighted to recognize the generosity of the donors who have helped make the following scholarships possible:

Adelaide Hixon Scholarship

Alan N. Mann (1908) Memorial Fellowship

Anne Armstrong-Colaccino Scholarship

Bataua Scholarship

Beinecke/YSE Scholarships

Bekenstein Climate Leaders Scholarship

Berkley Scholarship

Boyd Evison Scholarship Fund

Burt-Pfeiffer Fund

Cameron and Gus Speth Scholarship

Carl F. Norden Family Scholarship

Carl W. Knobloch, Jr. Fellowship

Charles Boughton Wood Fund

Charles Chacey Kuehn (M.F. 1934) Fund

Charles F. Wilson (B.A. 1939) Memorial Fund

Charles W. Goodyear Memorial Fund

Class of 1980 Scholarship

Coleman P. Burke Scholarship

Crane Family Scholarship

Crown Zellerbach Foundation Fund

David and Karen Sobotka Joint YSE-SOM Scholarship

David M. Smith, Morris K. Jesup Professor of Silviculture Scholarship

Dorothy S. McCluskey Scholarship

Drs. Poh Shien and Judy Young International Scholarship

Edith and Johannes Frondt Scholarship

Enid Storm Dwyer Scholarship

Environmental Scholars Fund

Flora and John Berbee Scholarship Fund

Forestry YAF Scholarship Fund

Frank & Lynne Wisneski YSE Scholarship

Fred Krupp Scholarship in Environmental Studies

Frederick V. Ernst (1960) Gift Fund

George Brett Memorial Fund

Gillian and Stuart W. Staley ’95 M.P.P.M., ’95 M.E.S. Scholarship

Gilman Ordway (B.A. 1947) Family Scholarship

Gonzalez Family Scholarship

H. Stuart Harrison (B.A. 1932) Fellowship

Heather L. Ross and Edward L. Strohbehn, Jr. Scholarship

Hubert Coffing Williams (Ph.D. 1906, M.F. 1908)

Jacqueline C. and John P. Hullar Scholarship

James Lippincott Goodwin (B.A. 1905, M.F. 1910)

Jiang, Kevin ’21 MESc Memorial Scholarship

John A. MacLean ’27S Scholarship

John and Catha Hesse Fund

John M. Musser Fellowship

John S. Griswold (B.A. 1937) Scholarship

Joint YSE-YDS Scholarship

Jonah Meadows Adels Memorial Scholarship

Joseph H. Williams Scholarship

Joseph Hixon YSE Scholarship

Kroon Environmental Studies Scholarship

Kushok Bakula Rimpoche Scholarship

Leadership Scholars Fund

Leah Hair Scholarship

Leland H. Burt (’30 B.S.) Endowed Scholarship

Leonard G. Carpenter (B.A. 1924) Scholarship

Marvin Klemme (M.F. 1935) Fellowship

MK McCarthy-RW Worth Scholarship (Leadership in Conservation Science Scholarship)

Mr. and Mrs. James Wiley Endowed Scholarship for Conservation Biology

Nelson C. Brown (B.A. 1906, M.F. 1908) Scholarship

Obernauer Family Scholarship

Parklands Scholarship

Paul Douglas Camp Memorial Scholarship

Peggy King Memorial Scholarship

PETAL Foundation Scholarship

Philip Laurance Buttrick (M.F. 1911) Scholarship

Polayes Scholarship

Preston R. Miller, Jr. '71 YSE Scholarship

Ralph C. Schmidt and Susan M. Babcock Scholarship

Ray L. Wilson Scholarship

Robert Charles Rooke, Jr. Broad Arrow Scholarship Fund

Robert Charles Rooke, Jr. Broad Arrow Scholarship Fund

Robert H. Kuehn, Jr. '64 B.A., '68 M.U.S., '68 M.Arch. Scholarship

Rockefeller-Underhill Scholarship for Tropical Conservation

Rodney B. Wagner Class of 1954 International Scholarship

Sara Shallenberger Brown Scholarship

Simeone Entomology Scholarship

Stapleton Scholarship

Stephen and Betty Kahn Scholarship

Strachan and Vivian Donnelley Scholarship

Student Conservation Association Fellowship in honor of John R. Twiss '60

Ted Weyerhaeuser Scholarship Fund

The David and Karen Sobotka Joint YSE-Jackson Institute Fellowship

The di Bonaventura Family Scholarship

The LeBlanc '98 Family Scholarship Fund

Thomas McHenry Scholarship

Three Cairns Scholarship

Trammell S. Crow (1974) Scholarship

Urey Lisiansky Scholarship Fund

Vira I. Heinz Endowment Scholarship

William D. Waxter III Fellowship

William Egbert Wheeler Fund

William Henry Sage Memorial Fund

Yale Club of New Haven

YSE Alumni Association Board Scholarship

YSE Class of 2005 Laurie B Cuoco Memorial Scholarship Fund

Employment Opportunities

YSE Work Study These positions vary from clerical to research to editorial work. Eligible students must have financial need, as confirmed by the YSE Office of Admissions and Financial Aid. Applications are available on the Yale Student Employment Office website (www.yalestudentjobs.org) beginning in August. The pay rate is fixed at $15.75 per hour. At least eighty positions are available annually and only to students with a YSE affiliation.

Regular Student Jobs Financial need is not required. Applications are available on the Yale Student Employment Office website (https://yalestudentjobs.org) beginning in August. Pay rates begin at $15.75 per hour. At least forty positions are available annually.

Teaching Fellowships and Research Assistantships Financial need is not required. Interested students should contact centers, departments, professors, and programs directly beginning in late spring or summer. Pay rates are either $5,400 or $10,800 per term, depending on the effort level and hours worked. At least thirty positions are available annually.

Community Service Jobs Eligible students must be U.S. citizens or permanent residents and have financial need, as confirmed by the YSE Office of Admissions and Financial Aid. Applications are available on the Yale Student Employment Office website beginning in August. Pay rates begin at $15.75 per hour. At least one hundred positions are available annually to students across the university.

Other On-Campus Jobs Financial need is not required. Applications are available on the Yale Student Employment Office website beginning in August. Pay rates begin at $15.75 per hour. At least four hundred positions are available annually to students across the university.

Loans

Federal Direct Stafford Loan (U.S. citizens and permanent residents only) In general, the maximum annual loan amount is $20,500 for interest rates and origination fees; for more information, visit www.studentaid.gov. There is no credit check required. The standard repayment term is ten years. A six-month grace period immediately follows separation from school or otherwise dropping below half-time enrollment status, at which time repayment is required. The loan is requested by completing and returning a loan request form available on the school's financial aid webpage, https://environment.yale.edu/admissions/masters/funding-your-degree/student-loans. After initial processing, the loan will be assigned to a servicer contracted with the U.S. Department of Education, such as FedLoan, Great Lakes, Navient, or Nelnet.

Federal Direct Grad PLUS Loan (U.S. citizens and permanent residents only) In general, the maximum annual loan amount is the cost of attendance less all other resources. For interest rates and origination fees, visit www.studentaid.gov. A credit check is required. Repayment terms are similar to Federal Direct Stafford Loans. The loan is requested by completing and returning a loan request form available on the

school's financial aid webpage, https://environment.yale.edu/admissions/masters/funding-your-degree/student-loans. After initial processing, the loan will be assigned to a servicer contracted with the U.S. Department of Education, such as FedLoan, Great Lakes, Navient, or Nelnet.

Yale International Loan (international students only) In general, the maximum annual loan amount is $30,000 or the cost of attendance less all other resources, whichever is less. The interest rate is fixed at 7.75% with an origination fee of 5%. There is no credit check required. Repayment terms are similar to Federal Direct Stafford Loans. The loan is requested by completing and returning a loan request form available on the school's financial aid webpage, https://environment.yale.edu/admissions/masters/funding-your-degree/student-loans. The Yale Student Loan Accounting and Collection Office is responsible for the management and collection of the loan.

Private Education Loan (U.S. citizens and permanent residents as primary borrowers or co-borrowers only) In general, the maximum annual loan amount is the cost of attendance less all other resources. The interest rate is fixed or variable and dependent on the credit rating of the primary borrower and co-borrower, if applicable. Origination fees range, repayment terms, and servicing are dependent on the lender. A credit check is required. The loan is requested by applying directly to a lender. A list of lenders from whom students have borrowed recently is available at www.elmselect.com/?schoolid=156#/results.

International Students—Certification of Finances for Visa

International students must certify full funding for their entire two-year course of study before visa documents can be issued. Instructions and forms are mailed after an admitted student accepts the offer of admission (deadline May 15). More information is available from Yale's Office of International Students and Scholars website, https://oiss.yale.edu.

Veterans

Eligible students are strongly encouraged to seek specific information about Veterans Administration (VA) benefits from their local Veterans Administration office by calling 800.827.1000 or visiting https://benefits.va.gov/gibill. The school also participates in the Yellow Ribbon Program, which covers the remaining tuition for qualifying Post-9/11 GI Bill students. The Director of Academic Affairs, in partnership with the associate director of financial aid, coordinates the administration of Veterans Administration benefits at YSE.

Institutional policy confirming compliance with 38 USC 3679

The Yale School of the Environment (YSE) permits any *covered* individual to attend or participate in the course of education during the period beginning on the date on which the individual provides to YSE a certificate of eligibility for entitlement to educational assistance under chapter 31 or 33 (a "certificate of eligibility" can also include a "Statement of Benefits" obtained from the Department of Veterans Affairs' website or a VAF 28-1905 form for chapter 31 authorization purposes) and ending on the earlier of the following dates:

1. The date on which payment from VA is made to YSE.

2. Ninety days after the date that YSE certified tuition and fees following the receipt of the certificate of eligibility.

YSE will not impose any penalty, including the assessment of late fees, the denial of access to classes, libraries, or other institutional facilities, or the requirement that a *covered* individual borrow additional funds, on any *covered* individual because of the individual's inability to meet his or her financial obligations to YSE due to the delayed disbursement funding from VA under chapter 31 or 33. NOTE: A *covered* individual is any individual who is entitled to educational assistance under chapter 31, Vocational Rehabilitation and Employment, or chapter 33, Post-9/11 GI Bill benefits.

LIFE AT THE SCHOOL OF THE ENVIRONMENT

Educational Facilities

Kroon Hall, the ultra-green home of the Yale School of the Environment, expresses in physical form the school's best traditions, values, and aspirations. The building, which opened in January 2009, achieves its remarkable energy savings from a host of design elements and technical strategies molded to fit the weather and climate of its New England location. Situated in the area of the university known as Science Hill, Kroon Hall is named for the family of benefactor and Yale College alumnus Richard Kroon, B.A. 1964. With its high barrel-vaulted gable ends, simple lines, and curved rooftop, Kroon Hall is a modernist blend of cathedral nave and Connecticut barn.

Kroon Hall provides office space for fifty faculty and staff members and has three classrooms. The 175-seat Burke Auditorium is used for lectures and classes, and commands beautiful views of West Rock and the David S. Ingalls Rink across the street. The Knobloch Environment Center is meant for socializing, but students have also embraced it as a study space. The Ordway Learning Center on the ground floor also has ample space for quiet study. The $43.5-million building was designed by Hopkins Architects of Great Britain in partnership with Connecticut-based Centerbrook Architects and Planners and holds the highest rating—platinum—in the green-building certification program, Leadership in Energy and Environmental Design (LEED). Kroon Hall provides 56,467 square feet and is designed to use 67 percent less energy than a typical building of its size. Its tall, thin shape and east-west orientation play a big role in heating and cooling. The lowest floor is set into a hillside, with only its south side exposed, providing thermal insulation, minimizing northern exposure, and increasing the amount of natural light that enters the building from adjacent courtyards. The south facade maximizes solar gain during the winter, and Douglas fir louvers covering glass facades on the east and west ends keep out unwanted heat and glare. The building's shape, combined with the glass facades, enables daylight to provide much of the interior's illumination. Light and occupancy sensors dim artificial lighting when it is not needed.

A 100-kilowatt rooftop array of photovoltaic panels is designed to provide 25 percent of the building's electricity. Four 1,500-foot-deep wells are designed to use the relatively constant 55° (F) temperature of underground water for heating and cooling, replacing the need for conventional boilers and air conditioning. Four solar panels embedded in the southern facade are designed to provide hot water. Exposed concrete walls and ceilings provide thermal stability by retaining heat in winter and cold in summer. Instead of air being forced through overhead ducts, an energy-saving displacement ventilation system moves warm and cool air through an air plenum and multiple diffusers in elevated floors. Low-velocity fans in the basement keep the air circulating throughout the building. In winter, the ventilation system also transfers the heat from exhaust to incoming fresh air; in summer, air handling units spray water on incoming fresh air, reducing its temperature by up to eighteen degrees through evaporation.

In mild weather, Kroon's occupants assist in the energy savings by opening windows in response to an electronic, color-coded prompt system. A pair of green and amber lights in each hallway indicate whether it's a "Green Day": i.e., when the green indicator light is on, the ventilation and cooling/heating systems shut down, and the windows should be opened for natural ventilation.

A rainwater-harvesting system channels water from the roof and grounds to a garden in the south courtyard, where aquatic plants filter out sediment and contaminants. The gray water, held in underground storage tanks, is used for irrigation and pumped back into Kroon for flushing toilets. The system is designed to save 300,000 gallons of potable city water annually and to reduce the burden on city sewers by lessening the amount of storm runoff. Half of Kroon Hall's red oak paneling—15,000 board feet—came from the 7,840-acre Yale-Myers Forest in northern Connecticut, which is managed by the school. The building's pale yellow exterior, composed of sandstone from Ohio, echoes other Yale buildings. The north and south courtyards were constructed to create a community among disparate buildings on Science Hill. The south courtyard, landscaped by Olin Studio of Philadelphia, is a raised platform, with a green roof of soil one-foot deep and surrounded by twenty-five varieties of native plantings. Underneath the courtyard is a service node, centralizing all trash and recycling pickups as well as deliveries for the southwest corner of Science Hill and accessible by a single driveway off Sachem Street.

Sage Hall, a four-story building located at 205 Prospect Street and a gift of William H. Sage, B.A. 1865, in memory of his son, DeWitt Linn Sage, B.A. 1897, was completed in 1923. Administrative, development, alumni, and program offices of the school are housed in Sage Hall, along with four classrooms. Sage Hall is home to a computer cluster with twenty-four computers for student use. Sage also houses a 490-square-foot student lounge, appointed with a large table and comfortable couches, which students use for studying, special events, and weekly social events. Bowers Auditorium is designed to handle large lectures and seminars as well as small group projects. Bowers, which has a seating capacity of one hundred with tables and chairs, was built onto Sage Hall in 1931 with funds provided by the bequest of Edward A. Bowers, B.A. 1879. In 2011 the original Bowers floor was replaced using beautiful red oak flooring harvested from Yale-Myers Forest, and in 2016 energy-efficient LED lights were installed.

Facilities for research and instruction in silviculture, natural resource and forest economics, forest policy, and biometry are in Marsh Hall at 360 Prospect Street in the Marsh Botanical Garden. A classroom, meeting space, kitchen, and accessible bathroom are available on the first floor. This large, four-story mansion was originally the residence of Professor Othniel C. Marsh, B.A. 1860, a distinguished paleontologist and Western explorer of the nineteenth century. He bequeathed the building to the university in 1899, and for twenty-five years it housed the entire Forest School. Marsh Hall was designated a National Historic Landmark by the United States Department of the Interior in 1965.

The William B. Greeley Memorial Laboratory at 370 Prospect Street, named in honor of William Buckhout Greeley, M.F. 1904, houses a recently renovated social space in the main lobby; laboratories for research into the ecology and management of landscapes and ecosystems, urban sustainability, the biology of trees, and environmental chemistry; and doctoral program spaces. The building was designed by renowned

architect Paul Rudolph and is a classic example of "Brutalist" architecture. Adjacent to the Greeley lab is a 3,800-square-foot greenhouse, which is used for hands-on learning and research. Greeley Laboratory and its greenhouse were built in 1959 with funds from the forest industries, the John A. Hartford Foundation, and other benefactors.

The Class of 1954 Environmental Science Center at 21 Sachem Street is dedicated to the Class of 1954 in honor of the $70 million the class donated in 2000 to support new science buildings and other major university priorities. It is an interdisciplinary facility built by the university with the aim of further fostering leadership in teaching of and research in science and engineering. The building was designed to encourage collaboration among faculty and students pursuing environmental studies. Four natural science faculty members from YSE have their laboratories in the Environmental Science Center, which also houses research laboratories for the Yale Science Departments of Ecology and Evolutionary Biology, Earth and Planetary Sciences, and Anthropology as well as the Yale Institute for Biospheric Studies.

The restored former residences at 301 Prospect Street and 380 Edwards Street house the offices of many of the school's programs, as well as doctoral student offices; each building has a classroom.

The mansion at 300 Prospect Street houses the school's admissions, financial aid, communications, and research offices.

Osborn Memorial Laboratories at the corner of Prospect Street and Sachem Street houses one YSE faculty member's lab and office in addition to many other Yale laboratories.

YALE FORESTS AND THE QUIET CORNER INITIATIVE

North of New Haven, the Yale Forests Program manages 10,852 acres of forestland in Connecticut, New Hampshire, and Vermont that are part of the Forest School at the Yale School of the Environment. The seven discrete forests, donated to the school between 1913 and 1986, range in size from the seventy-five-acre Crowell Ravine in Vermont to the 7,840-acre Yale-Myers Forest in northeast Connecticut. The composition of the Yale Forests reflects a latitudinal gradient ranging from a central hardwood cover type in Connecticut to a northern hardwood cover type in New Hampshire and Vermont, with extensive mixed-wood stands of pine and hemlock in both regions. The area encompassed by the forests includes almost all of the topographical and soil conditions, site classifications, and cover types found in New England.

The Yale Forests Program provides educational, research, and professional opportunities to the Yale community and beyond through a sustainably managed and ecologically sound working forest. Faculty and students use the Yale Forests as a laboratory for teaching, management, demonstration, and research. Students working at the Yale Forests receive training that covers aspects of hydrology and soils, taxonomy, forest and community ecology, silviculture, forest operations, forest finance and policy, and sociology in order to prepare them for careers as foresters and natural resource managers. Every summer ten to twelve students are chosen for the apprentice forester program at the Yale Forests, which includes hands-on training in maintenance of infrastructure, property boundary research and delineation, geographic information systems (GIS), mapping and classification, sampling and inventory, managing forest

operations, and the design and implementation of silvicultural prescriptions. Several students from the apprentice program are selected to work for the Yale Forests Program the following academic year as assistant forest managers, where they receive additional training in forest administration and management.

Research performed at the Yale Forests is conducted under the supervision of faculty members of the school and by academic institutions across the region and encompasses a broad range of topics that include forest ecology, silviculture, aquatic and wildlife community ecology, hydrology, and economic, legal, and social studies. The forest is used for both doctoral and master's student research, the latter performed either as an independent project or in conjunction with student involvement with existing forest management. The forests also serve as a platform for collaborative research with other universities. Many breakthroughs in human understanding of ecological function began with research conducted at the Yale Forests.

The Yale Forests are used for both academic field trips and workshops held for professional or community organizations. Field trip and workshop topics are wide-ranging and include silviculture and forest dynamics, hydrology, wildlife habitat, carbon dynamics, and forest management.

Faculty and staff oversee management of the forests in partnership with three postgraduate fellows. Graduate professional students working as management fellows or coordinators carry out the bulk of the on-the-ground management. The forests are maintained as working forests, and outputs of management include commercial timber and non-timber forest products. The Yale-Myers Forest is the largest and most actively utilized parcel managed by the Yale Forests Program and is certified by the Forest Stewardship Council. Facilities at Yale-Myers Forest include 8,000 total square feet of living space within five buildings, including rustic bunkhouses that accommodate forty-eight, a classroom and library, kitchen and dining hall, communal living space, a research lab, and an open-air pavilion.

The Quiet Corner Initiative (QCI) engages with the communities and working landscape that surround Yale-Myers Forest. QCI works by developing programs that connect master's-level courses and university research to real environmental assessment and management challenges on private lands surrounding the forest. Current programs focus on forest and open space conservation and management; watersheds and rivers; renewable energy; and sustainable agriculture. The initiative seeks to advance three separate but related sets of goals: (1) to enrich the applied curriculum for professional students at the School of the Environment, providing reliable and consistent opportunities to bring learned skills to tangible problems that are in easy reach of the classroom and that contribute to a vibrant rural economy based on sustainable natural resource management; (2) to provide and cultivate a high-quality natural and social science research environment for students and faculty to investigate and analyze the drivers of environmental change and adaptive management at a landscape scale; and (3) to leverage the traditional strengths of Yale University in research, education, and leadership in working toward landscape-scale sustainability goals in our own backyard.

In addition to the forestland managed by the Yale Forests Program, close working relationships exist with non-Yale forests that faculty and students use for education and research. Yale has a long history of collaboration with the 6,800-acre Great Mountain

Forest in northwestern Connecticut. The program manages the Yale Camp there, on about eight acres deeded to Yale in 1940 by Edward C. Childs, 1928 B.A., 1932 M.F., and his family. The camp can accommodate fifty-four visitors overnight in the main lodge, four cabins, and a director's cottage. Sleeping tents in two large fields can accommodate visitors as well. The camp is mostly used by MODs, with sixty-five people visiting each week. It is powered by a new ground-based solar array. The kitchen in the main lodge is a communal kitchen licensed by the State of Connecticut.

Additionally, the 20,000-acre forestland owned and managed by the South Central Connecticut Regional Water Authority in New Haven County is one of the oldest managed forests in the western hemisphere and easily accessible from Yale's campus. Connecticut state forests and Yale's long history with the Connecticut Forest & Park Association serve as resources for student and faculty engagement as well.

LIBRARY COLLECTION

YSE students have access to the enormous holdings of the Yale University Library (YUL), which comprises fifteen million print and electronic volumes in more than a dozen different libraries and locations. The YUL is committed to acquiring whatever books and journals are needed to support Yale's teaching and research activities. The bulk of YSE materials are located online and in the Marx Science and Social Science Library, while smaller, more specialized collections, such as the Henry Solon Graves Papers and the Rachel Carson Papers, are housed in Manuscripts and Archives (in Sterling Memorial Library) and the Beinecke Rare Book and Manuscript Library. The librarian for environmental studies has an office in Marx Library (Room C44) and is available most weekday hours to provide assistance to students. Reference and information services are provided by experienced staff in the Marx Library. For electronic retrieval, the library has a network of databases accessible via its website, covering general environmental topics as well as the specific subject areas of forestry, soils, fish and wildlife, and water resources. Overall, Yale University Library subscribes to more than one thousand databases. Library resources outside of Yale are accessed through the Borrow Direct service as well as Interlibrary Loan. The YUL supports both EndNote and Zotero bibliographic data management tools, and the librarian for environmental studies provides instruction in both.

The YSE Library Research Guide is located at https://guides.library.yale.edu/yse. There are links to Orbis, Yale's main online catalog; direct links to several of the most frequently used bibliographic databases, such as BIOSIS, Web of Science, ProQuest Natural Science Collection, Environment Complete, and CAB Direct; and information ranging from instruction opportunities to online full-text journals. In-house bibliographic instruction begins during MODs and continues throughout the term. Notification of tours and group instruction sessions is posted via email; students may also contact the librarian directly (203.432.5912) to set up an individual session.

For additional information, please visit https://web.library.yale.edu.

COMPUTER RESOURCES

The mission of the YSE Information Technology Department (YSE-IT) is to support all aspects of computing for every member of the Yale School of the Environment community. We use and support multiple platforms, including Windows and Macintosh operating systems. Students are strongly encouraged, but not required, to

bring their own computers. Admitted students may contact the YSE-IT Helpdesk by emailing helpdesk.yse@yale.edu for advice on the selection of appropriate hardware and software. We strongly encourage the purchase of Apple Macbook Pro or Lenovo ThinkPad (T or X series) laptop computers. A robust campus network provides wireless access within all YSE buildings and throughout the Yale campus.

YSE-IT and trained student technicians from Yale's Student Technology Collaborative provide drop-in technical support for students to assist with any academic or research computer needs they may have while on campus. Weekend and after-hours student support is also available at Bass Library, within easy walking distance of the school. YSE-IT provides secure, centralized backup services for all YSE faculty, staff, and students, as well as a YSE-provisioned Dropbox account.

YSE-IT maintains a computer lab in Sage Hall, Room 39, with sixteen computer workstations that feature dual 24-inch displays, 3 GHz Intel i5 (quad-core) and 2.2 Xeon (10-core) processors, and at least 16 GB of RAM that were updated in the summer of 2018. The lab also features four 27-inch high-definition monitors for students who would like to utilize their own laptops.

The computer lab houses a multifunction copy/scan/fax/print device. Additional wireless student printing is available in each YSE building and throughout the Yale campus via the BluePrint (PaperCut) Printing System. Three-dimensional and wide-format printing is also available at the Yale Center for Engineering Innovation & Design (CEID) and the Yale School of Architecture.

YSE-IT maintains an inventory of equipment that students may borrow for short periods of time through an online equipment checkout system (https://reservations.yale.edu/yse). Equipment may be borrowed at no charge (late and replacement fees apply if equipment is returned late, lost, or damaged). Included are iPads, GPS units, digital cameras, walkie-talkies, compact audio recorders, and other equipment.

The Yale University Library is also very active in the integration of information resources in digital format. Students and faculty have online access to an extensive variety of journals and databases as well as innovative research resources such as the Digital Humanities Lab (https://dhlab.yale.edu).

The Marx Science and Social Science Library (https://marx.library.yale.edu) offers an array of digital media technologies and operates several important digital resources, including the Statistical Classroom ("StatLab"), featuring thirty machines with dual monitors, and a variety of software and databases, such as a Bloomberg Terminal. The Marx Library is also home to a full-time GIS librarian who assists students in obtaining and working with GIS datasets to support their work in any part of the globe, and to a data librarian who is available for questions or consultation about finding, using, and managing research data in the sciences and social sciences.

Faculty members have also developed many special computer applications for their projects, and some of these are available for student use in the Sage Hall computer lab.

Communications

The Office of Communications promotes the work of the Yale School of the Environment, sharing stories about its innovativeness and excellence in teaching and scholarship to a wide range of audiences. We also provide a variety of services to members of the community to help them more effectively tell their own stories.

We aim to strengthen understanding and deepen the discourse on environmental issues, inform the public about the ways the school is contributing to achieving a more sustainable future, and encourage the integration of those issues into strategies for business, international development, government, and nongovernmental organizations.

The communications team publicizes original research by our faculty, fellows, and students through traditional and digital media.

School news, including school-sponsored events, alumni profiles, and other community updates are regularly published on YSE's website, (https://environment.yale.edu) and distributed through our newsletter YSE 3, (https://yse.to/subscribe) and on our social media platforms, including Facebook (https://www.facebook.com/YaleEnvironment), Instagram (https://www.instagram.com/environmentyale), LinkedIn (https://www.linkedin.com/school/environmentyale), and YouTube (https://www.youtube.com/@YaleEnvironment).

The communications office publishes *Canopy* magazine in print and online, (https://environment.yale.edu/canopy), which showcases how the YSE community—including its highly engaged alumni network—is providing innovative leadership in addressing environmental challenges across the planet. It also publishes *Impacts*, our annual report, which highlights the progress the school has made in achieving the goals defined in its Strategic Plan and the many ways the YSE community is working to address today's urgent environmental challenges.

Other communication platforms at YSE include:

- *Yale Environment 360* (https://e360.yale.edu) features reporting, analysis, and opinion on global environmental issues from leading writers, scientists, policy makers, and journalists in the field. Launched in 2008, this online magazine has established a broad global audience and received numerous awards and honors.
- *Sage Magazine* (https://sagemagazine.org) is a student-run environmental arts and journalism publication. Through creative and informative journalism, *Sage* seeks to expand popular notions of environmentalism and bring depth and focus to the debate around pressing environmental issues.
- *Yale Environment Review* (https://environment-review.yale.edu) is a student-run online publication that provides concise summaries of peer-reviewed research from around the world, with a focus on topics of general interest to those engaged in environmental and natural resource management.
- The annual Environmental Film Festival at Yale (https://effy.yale.edu), held each spring in New Haven, is one of America's premier student-run environmental film festivals.
- Reports and newsletters from the school's centers and programs, listed online at https://environment.yale.edu/research/centers.

RECORDING POLICY

In order to capture the breadth of activities that occur at YSE—and integrate the expertise of our faculty, students, and visitors into the broader environmental dialogue—Yale University frequently photographs, videotapes, and/or records events, lectures, and activities (including during alumni events) at YSE. By attending and/or participating in classes and in other YSE and university activities, those in attendance agree to the university's use and distribution of their image and/or voice in photographs, audio, and video capture, or in electronic reproductions of such classes and activities. These images, recordings, or excerpts may be included, for example, in Yale University websites, publications, and online courses, and otherwise used to support the university's mission.

Student Organizations

The school has many student-run interest groups. Current student interest groups include:

- Accessibility SIG
- Africa SIG
- Asia SIG
- Birding SIG
- Climate Change
- ConBio (Society for Conservation Biology)
- Conservation Finance
- Economic Considerations of Nature (ECON)
- Energy SIG (ESIG)
- Environmental Data Science at Yale (EDSY)
- Environment Film Festival
- Environmental Justice at Yale (EJAY)
- Fire SIG
- First-Generation, Low-Income (FGLI)
- FOOD (FKA CAFÉ)
- Fresh & Salty (Water SIG)
- Green Chemistry SIG
- GROUNDED
- Industrial Ecology and Environmental Management (IEME)
- International Society of Tropical Foresters (ISTF)
- Latin American SIG (LA SIG)
- Middle Eastern and North African SIG (MENA)
- Out in the Woods (OIW)
- Outdoor Rec Industry SIG
- Plant Based at Yale
- Political Ecology SIG
- Resilience, Adaptation, & Disaster SIG

- Roots
- SAGE Magazine
- SCOPE SIG
- Society for Ecological Restoration (SER)
- Sustainable Development in Latin America and the Caribean (SDLAC)
- Sustainable Fashion SIG (SFAY)
- Westies
- Woodworking SIG
- Yale Environment Women (YEW)
- Yale Temperate Forestry
- YSE Create Club

The activities of these groups include sponsoring guest and student lectures, organizing field trips, sponsoring workshops, organizing social events, holding conferences, and interacting with regional divisions of their respective societies. If a student is interested in starting a new SIG they should contact SAC and the Office of Student Affairs at studentaffairs.yse@yale.edu.

Funding for Master's Student Projects and Activities

Master's students often seek funding for research, professional activities, and social events. Sometimes the request is for an individual activity, sometimes it is on behalf of a group. Students can apply to several funds at Yale University and the Yale School of the Environment. The following are some of the more useful opportunities:

- Master's Student Travel Fund to support attendance at a conference or symposium for networking.
- The Carpenter-Sperry Fund for attendance at a conference or symposium at which a student is giving a research talk.
- MacMillan Center for International and Area Studies, which can help bring international visitors to Yale for a lecture or a conference.
- Student Affairs Committee (SAC), which supports activities by our many student interest groups (SIGs).
- YSE Community Events Fund, administered by the dean's office, which supports student events and conferences.
- Class of '80 Student Project Fund, administered by the school's Office of Development and Alumni Services, to enrich the quality of life of the student body.
- Graduate Student Assembly Conference Travel Fund which awards travel funds to graduate students.

Alumni Association

The YSE Alumni Association is led by an elected Alumni Association Board (AAB) of twenty to twenty five alumni who represent the school's more than 5,000 alumni around the world. The AAB meets monthly: in-person two times per year and remotely

throughout the rest of the academic year, in addition to various committee meetings as needed. The AAB is supported by staff in the YSE Office of Development and Alumni Services.

AAB members lead a number of initiatives focused on alumni-to-alumni, alumni-to-student, and alumni-to-university engagement. The AAB supports and generates efforts around diversity, equity, and inclusion at the school and among alumni; organizes field-based learning programs, educational opportunities, and volunteer opportunities for alumni; and communicates with the alumni body.

The Alumni Association Board also oversees the annual AAB nominations/elections process as well as the selection of the Distinguished Alumni and Prospect Street award recipients named at reunion weekend each year. The YSE Alumni Association Board Scholarship is awarded annually to two current students who demonstrate outstanding community engagement and volunteer leadership. Alumni events and e-newsletters, along with the YSE magazine *Canopy,* keep alumni throughout the world in touch with each other and the School.

The YSE Alumni Association is also affiliated with the Yale Alumni Association (YAA), which serves all alumni of Yale University.

Alumni may contact the Office of Development and Alumni Services at alumni.yse@yale.edu.

Office of Career and Professional Development

http://environment.yale.edu/careers

The Office of Career and Professional Development (CPD) seeks to inspire and prepare all students to pursue high-impact environmental careers aligned with their individual abilities, experience, and interests. Its mission is to proactively educate students to maximize their entire YSE experience for impactful careers and lives; cultivate strong relationships with leading domestic and international environmental employers; and support career-related initiatives across YSE.

The CPD's diverse resources, programs, and services enable users to develop key skills needed to present themselves professionally on the job market, develop and refine meaningful career goals, and chart a strategy for conducting effective job and internship searches. We work with students on an ongoing basis through individual advising appointments as well as through workshops conducted by staff and other career development and environmental professionals.

CAREER AND PROFESSIONAL DEVELOPMENT RESOURCES

Career Advising and Peer Advising

Through individual career advising appointments with our professional team, and drop-in hours with trained peer reviewers, students work with CPD on:

- General career advising (strategy, focus, vision)
- LinkedIn profile development and reviews
- Résumé reviews

- Cover letter reviews
- CV reviews
- Personal statement reviews for Ph.D. program and fellowship applications
- Online tools orientation (YSE Next, LinkedIn, Yale Cross Campus, AlumniFire)
- Interview skills and preparation coaching
- Salary negotiation strategies

Workshops and Information Sessions

These programs are designed to guide students through phases of career readiness:

- Building Your LinkedIn Profile
- Résumé Workshop with Peer Review
- Cover Letter Writing and Peer Review
- Interview Skills Workshop: Behavioral and Traditional Interview Questions
- Applying for the Ph.D.
- Job Offer Negotiations

Career Fairs and Regional Events

YSEinDC: Approximately one hundred students attend this annual program based on employers in the Washington, D.C. area. The event has been held both in person and virtually.

All Ivy Environmental and Sustainable Development Career Fair: Up to eighty employers in a range of fields and more than 1,000 students participate in this annual fair jointly sponsored by the eight Ivy League institutions, which is open to all graduate students, undergraduate students, and alumni from partner schools. The fair has been held both virtually and in person at Columbia University in New York.

Professional Skills Modules (PSMs)

All Master of Environmental Management (MEM) students at YSE are required to complete four Professional Skills Modules (PSMs) in order to graduate. Professional Skills Modules provide students with opportunities to strengthen their proficiency in core areas considered essential for all environmental professionals.

PROFESSIONAL SKILLS MODULE SAMPLE TOPICS AND OBJECTIVES

1. Verbal Communication This workshop is designed to teach students how to give clear and compelling oral presentations. Facilitators introduce participants to best practices and useful frameworks and then give students the chance to practice, providing iterative feedback on individual presentations.
2. Visual Communication of Data Through the Visual Communication workshop, students learn core principles for visually conveying data and other complex information. Students explore different ways to use charts, graphs, tables, infographics, and other methods of creating visual representations of data to engage with different audiences. Using pre-work exercises and interactive group activities, participants emerge ready to communicate better visually.
3. Negotiation This module provides an introduction to general negotiation topics through a variety of exercises. Content includes the concept of negotiation, strategies

for preparing to negotiate, positions/interests, best alternatives to negotiated agreements, and more.

4. Cultural Competence The goals of this workshop are to cultivate an understanding of why cultural competence across differences—including those based on experience, expertise, values and other factors—is important and to understand how each of us can work across differences and develop skills for interrupting bias effectively in the workplace.

5. Fundraising This workshop uses a mix of lectures, discussions, and role-plays to demystify the fundraising process and share key approaches for attracting people to invest in your work. Students leave with an understanding of how to develop and steward relationships with funders, how to assess funding landscapes, and how to make funding asks.

6. Project Management Rather than review an existing guide to project management, this workshop explores a number of key questions that practitioners use when tackling and managing environmental challenges. The instructors draw examples and lessons learned from their work across scales, sectors, cultures and continents, as well as from experiences of workshop participants.

7. Stakeholder Engagement This module introduces students to using stakeholder engagement processes, beginning with the conceptual basics: why, how, when, and what form of engagement to use. They then learn the practical steps of how to design, govern, fund, manage, evaluate, and end a successful stakeholder process.

8. Facilitation This session provides an overview of key strategies and best practices to help participants make the most of their time with project partners and colleagues. It focuses on how to design and manage well-run, collaborative meetings to accomplish shared goals.

9. Environmental Career Strategies This interactive workshop guides participants through a series of conversations and exercises designed to help students develop personal career strategies that will assist them in identifying, joining, and participating in environmental professional communities of practice to improve participants' chance of launching and advancing in a high impact career that also meets personal goals and preferences.

Summer Experience Program

A ten- to twelve-week summer experience is required of all master's candidates at YSE. Summer experiences provide the opportunity to align research and practice, enhance professional and technical skills, and gain professional confidence and experience. Students are assisted by the CPD, faculty, and alumni in locating or designing opportunities that meet their individual needs and interests.

ENV 006, Summer Internship/Research The summer experience is an important opportunity for students to apply knowledge and skills gained during their first year of study, gain professional experience and build networks, and investigate potential career paths. Experiences are ten and twelve weeks in duration, typically in the summer between the first and second years of the program. Students have latitude in designing an experience aligned with individual academic and career goals. Students are responsible for securing or creating their summer experience with appropriate faculty supervision, applying for and securing summer funding, and completing appropriate

online forms before and after in order to receive course credit. Required of all master's candidates. 0 credits.

Yearly outcomes available online at https://careers.environment.yale.edu/resources/summer-experiences-outcome-data.

IMMEDIATELY FOLLOWING GRADUATION

Each year YSE graduates enjoy employment success in environmental science, policy, and management within the United States and around the world; pursue entrepreneurial ventures; and continue their education with further study. Details including salary information on the most recent as well as previous classes can be found online at https://careers.environment.yale.edu/resources/employment-outcome-data.

Diversity, Equity, and Inclusion

The Office of Diversity, Equity, and Inclusion helps to assure that all members of the school's community can contribute meaningfully and authentically to a sustainable future. To cultivate a sense of belonging, the office supports programming that has taken the forms of festivities celebrating holidays from around the world, provocative panel discussions that examine the intersections of environmental and societal issues, and high-spirited events that foster the expansion of professional networks, among others. The Office of DEI also facilitates training sessions aimed at minimizing the kinds of interpersonal interactions that tend to inhibit learning, scholarship, and professional practice. Such activities have included, for example:

- trainings and workshops about pronouns and gender identities, implicit bias, and others;
- cultural celebrations and recognition of important holidays, such as Lunar New Year, Passover, and Ramadan;
- recognition and programming around nationally recognized heritage months;
- community-building events featuring a series of DEI dinners;
- career-path discussions with students and faculty of color; and
- hosting renowned guest speakers.

Newcomers to the school are provided with resources that enable them to build community and find culturally appropriate goods and services at Yale and throughout the New Haven area. In collaboration with colleagues from across the university, members of the DEI team promote civil discourse throughout the school's spaces and activities. The office may be contacted at yse.dei@yale.edu.

Leave of Absence

Students are expected to follow a continuous course of study at the School of the Environment. However, a student who wishes or needs to interrupt study temporarily may request a leave of absence. There are three types of leave—personal, medical, and parental—all of which are described below. The general policies that apply to a leave of absence are:

1. Any student who is contemplating a leave of absence should see the assistant dean of student affairs to discuss the necessary application procedures.

2. All leaves of absence must be approved by the assistant dean of student affairs or the senior associate dean of academic affairs. Medical leaves also require the written recommendation of a physician on the staff of Yale Health, as described below.
3. A student may be granted a leave of absence of one to two years. Any leave approved by the assistant dean of student affairs or the senior associate dean of academic affairs will be for a specified period.
4. International students who apply for a leave of absence must consult with OISS regarding their visa status.
5. A student on a leave of absence may complete outstanding work in courses for which extensions have been granted. The student may not, however, fulfill any other degree requirements during the time on leave.
6. A student on a leave of absence is not eligible for financial aid, including loans; and in most cases, student loans are not deferred during periods of non-enrollment.
7. A student on a leave of absence is not eligible for the use of any university facilities normally available to enrolled students.
8. A student on leave of absence may continue to be enrolled in Yale Health by purchasing coverage through the Student Affiliate Coverage plan. In order to secure continuous coverage from Yale Health, enrollment in this plan must be requested prior to the beginning of the term in which the student will be on leave. If a leave of absence is granted during the term, the student must request Yale Health Affiliate Coverage enrollment within thirty days of the date the registrar was notified of the leave. Coverage is not automatic; enrollment forms are available from the Member Services Department of Yale Health, 203.432.0246, or can be downloaded from the Yale Health website (http://yalehealth.yale.edu).
9. A student on a leave of absence does not have to file a formal application for readmission. However, the student must notify the assistant dean of student affairs or the senior associate dean of academic affairs in writing of the intention to return at least eight weeks prior to the end of the approved leave. In addition, a returning student who wishes to be considered for financial aid must submit appropriate financial aid applications to the school's financial aid office to determine eligibility.
10. A student on a leave of absence who does not return at the end of an approved leave, and does not request and receive an extension from the dean, is automatically dismissed from the school.

Personal Leave of Absence A student who wishes or needs to interrupt study temporarily because of personal exigencies may request a personal leave of absence. The general policies governing all leaves of absence are described above. A student who is current with degree requirements is eligible for a personal leave after satisfactory completion of at least one term of study. Personal leaves cannot be granted retroactively and normally will not be approved after the tenth day of a term.

To request a personal leave of absence, the student must apply in writing before the beginning of the term for which the leave is requested, explaining the reasons for the proposed leave and stating both the proposed start and end dates of the leave, and the address at which the student can be reached during the period of the leave. If the assistant dean of student affairs and the senior associate dean of academic affairs find the student to be eligible, the leave will be approved. In any case, the student will be informed in writing of the action taken. A student who does not apply for a personal

leave of absence, or whose application for a leave is denied, and who does not register for any term, will be considered to have withdrawn from the school.

Medical Leave of Absence A student who must interrupt study temporarily because of illness or injury may be granted a medical leave of absence with the approval of the assistant dean of student affairs and the senior associate dean of academic affairs, on the written recommendation of a physician on the staff of Yale Health. The general policies governing all leaves of absence are described above. A student who is making satisfactory progress toward degree requirements is eligible for a medical leave any time after matriculation. The final decision concerning a request for a medical leave of absence will be communicated in writing by the assistant dean of student affairs.

The School of the Environment reserves the right to place a student on a mandatory medical leave of absence when, on recommendation of the director of Yale Health or the chief of the Mental Health and Counseling department, the dean of the school determines that, because of a medical condition, the student is a danger to self or others, the student has seriously disrupted others in the student's residential or academic communities, or the student has refused to cooperate with efforts deemed necessary by Yale Health and the dean to make such determinations. Each case will be assessed individually based on all relevant factors, including, but not limited to, the level of risk presented and the availability of reasonable modifications. Reasonable modifications do not include fundamental alterations to the student's academic, residential, or other relevant communities or programs; in addition, reasonable modifications do not include those that unduly burden university resources.

An appeal of such a leave must be made in writing to the dean of the school no later than seven days from the effective date of the leave.

An incident that gives rise to voluntary or mandatory leave of absence may also result in subsequent disciplinary action.

A student who is placed on medical leave during any term will have tuition adjusted according to the same schedule used for withdrawals (see Tuition Rebate and Financial Aid Refund Policy). Before re-registering, a student on medical leave must secure written permission to return from a Yale Health physician.

Leave of Absence for Parental Responsibilities A student who wishes or needs to interrupt study temporarily for reasons of pregnancy, maternity care, or paternity care may be granted a leave of absence for parental responsibilities. The general policies governing all leaves of absence are described above. A student who is making satisfactory progress toward degree requirements is eligible for parental leave any time after matriculation.

Any student planning to have or care for a child is encouraged to meet with the assistant dean of student affairs to discuss leaves and other short-term arrangements. For many students, short-term arrangements rather than a leave of absence are possible. Students living in university housing units are encouraged to review their housing contract and the related polices of the Yale Housing before applying for a parental leave of absence. Students granted a parental leave may continue to reside in university housing to the end of the academic term for which the leave was first granted, but no longer.

U.S. Military Leave Readmissions Policy

Students who wish or need to interrupt their studies to perform U.S. military service are subject to a separate U.S. military leave readmissions policy. In the event a student withdraws or takes a leave of absence from the School of the Environment to serve in the U.S. military, the student will be entitled to guaranteed readmission under the following conditions:

1. The student must have served in the U.S. Armed Forces for a period of more than thirty consecutive days;
2. The student must give advance written or oral notice of such service to the assistant dean of student affairs or the senior associate dean of academic affairs. In providing the advance notice the student does not need to indicate an intention to return. This advance notice need not come directly from the student, but rather, can be made by an appropriate officer of the U.S. Armed Forces or official of the U.S. Department of Defense. Notice is not required if precluded by military necessity. In all cases, this notice requirement can be fulfilled at the time the student seeks readmission, by submitting an attestation that the student performed the service.
3. The student must not be away from the school to perform U.S. military service for a period exceeding five years (this includes all previous absences to perform U.S. military service but does not include any initial period of obligated service). If a student's time away from the school to perform U.S. military service exceeds five years because the student is unable to obtain release orders through no fault of the student or the student was ordered to or retained on active duty, the student should contact the assistant dean of student affairs to determine if the student remains eligible for guaranteed readmission.
4. The student must notify the school within three years of the end of the U.S. military service of the intention to return. However, a student who is hospitalized or recovering from an illness or injury incurred in or aggravated during the U.S. military service has up until two years after recovering from the illness or injury to notify the school of the intent to return.
5. The student cannot have received a dishonorable or bad conduct discharge or have been sentenced in a court-martial.

A student who meets all of these conditions will be readmitted for the next term, unless the student requests a later date of readmission. Any student who fails to meet one of these requirements may still be readmitted under the general readmission policy but is not guaranteed readmission.

Upon returning to the school, the student will resume education without repeating completed course work for courses interrupted by U.S. military service. The student will have the same enrolled status last held and with the same academic standing. For the first academic year in which the student returns, the student will be charged the tuition and fees that would have been assessed for the academic year in which the student left the institution. Yale may charge up to the amount of tuition and fees other students are assessed, however, if veteran's education benefits will cover the difference between the amounts currently charged other students and the amount charged for the academic year in which the student left.

In the case of a student who is not prepared to resume studies with the same academic status at the same point where the student left off or who will not be able to complete the program of study, the School of the Environment will undertake reasonable efforts to help the student become prepared. If after reasonable efforts, the school determines that the student remains unprepared or will be unable to complete the program, or after the school determines that there are no reasonable efforts it can take, the school may deny the student readmission.

Emergency Suspension

The dean of the School of the Environment, or a delegate of the dean, may place a student on an emergency suspension from residence or academic status when (1) the student has been arrested for or charged with serious criminal behavior by law enforcement authorities; or (2) the student allegedly violated a disciplinary rule of the school and the student's presence on campus poses a significant risk to the safety or security of members of the community.

Following an individualized risk and safety analysis, the student will be notified in writing of the emergency suspension. A student who is notified of an emergency suspension will have twenty-four hours to respond to the notice. The emergency suspension will not be imposed prior to an opportunity for the student to respond unless circumstances warrant immediate action for the safety and security of members of the community. In such cases, the student will have an opportunity to respond after the emergency suspension has been imposed.

When a student in the school is placed on an emergency suspension, the matter will be referred for disciplinary action in accordance with school policy. Such a suspension may remain in effect until disciplinary action has been taken with regard to the student; however, it may be lifted earlier by action of the dean or dean's delegate, or by the disciplinary committee after a preliminary review.

Freedom of Expression

The Yale School of the Environment is committed to the protection of free inquiry and expression in the classroom and throughout the School community. In this, the school reflects the university's commitment to and policy on freedom of expression as eloquently stated in the Woodward Report (Report of the Committee on Freedom of Expression at Yale, 1974). See https://studentlife.yale.edu/guidance-regarding-free-expression-and-peaceable-assembly-students-yale.

YALE UNIVERSITY RESOURCES AND SERVICES

A Global University

Global engagement is core to Yale's mission as one of the world's great universities. Yale aspires to:

- Be the university that best prepares students for global citizenship and leadership
- Be a worldwide research leader on matters of global import
- Be the university with the most effective global networks

Yale's engagement beyond the United States dates from its earliest years. The university remains committed to attracting the best and brightest from around the world by offering generous international financial aid packages, conducting programs that introduce and acclimate international students to Yale, and fostering a vibrant campus community.

Yale's globalization is guided by the vice provost for global strategy, who is responsible for ensuring that Yale's broader global initiatives serve its academic goals and priorities, and for enhancing Yale's international presence as a leader in liberal arts education and as a world-class research institution. The vice provost works closely with academic colleagues in all of the university's schools and provides support and strategic guidance to the many international programs and activities undertaken by Yale faculty, students, and staff.

Teaching and research at Yale benefit from the many collaborations underway with the university's international partners and the global networks forged by Yale across the globe. International activities across all Yale schools include curricular initiatives that enrich classroom experiences from in-depth study of a particular country to broader comparative studies; faculty research and practice on matters of international importance; the development of online courses and expansion of distance learning; and the many fellowships, internships, and opportunities for international collaborative research projects on campus and abroad. Together these efforts serve to enhance Yale's global educational impact and are encompassed in the university's global strategy.

The Office of International Affairs (https://world.yale.edu/oia) provides administrative support for the international activities of all schools, departments, centers, and organizations at Yale; promotes Yale and its faculty to international audiences; and works to increase the visibility of Yale's international activities around the globe. OIA also coordinates Yale's program for hosting scholars at risk.

The Office of International Students and Scholars (https://oiss.yale.edu) hosts orientation programs and social activities for the university's international community and is a resource for international students and scholars on immigration matters and other aspects of acclimating to life at Yale.

The Yale Alumni Association (https://alumni.yale.edu) provides a channel for communication between the alumni and the university and supports alumni organizations and programs around the world.

Additional information may be found on the "Yale and the World" website (https://world.yale.edu), including resources for those conducting international activities abroad and links to international initiatives across the university.

Graduate Housing

https://housing.yale.edu
housing@yale.edu
203.432.2167

The Yale Graduate Housing Office has dormitory and apartment units available for graduate and professional students. Dormitories are single-occupancy and two-bedroom units of varying sizes and prices. They are located across the campus, from Edward S. Harkness Memorial Hall, serving the medical campus, to 254 and 276 Prospect Street and 272 Elm Street, serving the central/science campus. Unfurnished apartments consisting of efficiencies and one-, two-, and three-bedroom apartments for singles and families are also available. Family housing is available in Whitehall and Esplanade Apartments. The graduate housing website is the venue for graduate housing information and includes dates, procedures, facility descriptions, floor plans, and rates. Applications for the new academic year are available beginning April 1 and can be submitted directly from the website with a Yale NetID. Room selection for paired roommates begins April 19. Room selection for all others begins April 20.

The Yale Graduate Housing Office also manages the Off Campus Living listing service (http://offcampusliving.yale.edu; 203.436.9756), which is the exclusive Yale service for providing off-campus rental and sales listings from New Haven landlords. This secure system allows members of the Yale community to search rental listings, review landlord/property ratings, and search for a roommate in the New Haven area. On-campus housing is limited, and members of the community should consider off-campus options. Yale University discourages the use of Craigslist and other third-party nonsecure websites for off-campus housing searches.

Identification Cards

Yale University issues identification (ID) cards to faculty, staff, and students. ID cards support the community's safety and security by allowing access to many parts of campus: dining halls and cafés, residential housing, libraries, athletic centers, workspaces, labs, and academic buildings. Cultivating an environment of public safety requires the entire community to work together to ensure appropriate use of our spaces, as well as to foster a sense of belonging for all members of our community.

University policies, regulations, and practice require all students, faculty, and staff to carry their Yale ID card on campus and to show it to university officials on request. Yale ID cards are not transferable. Community members are responsible for their own ID card and should report lost or stolen cards immediately to the Yale ID Center (https://idcenter.yale.edu).

Members of the university community may be asked to show identification at various points during their time at Yale. This may include but not be limited to situations such as: where individuals are entering areas with access restrictions, for identification in emergency situations, to record attendance at a particular building or event, or for other academic or work-related reasons related to the safe and effective operation and functioning of Yale's on-campus spaces.

For some members of our community, based on the needs and culture of their program, department, and/or characteristics of their physical spaces, being asked to show an ID card is a regular, even daily, occurrence. However, for others it may be new or infrequent. For some, being asked to produce identification can be experienced negatively, as a contradiction to a sense of belonging or as an affront to dignity. Yale University is committed to enhancing diversity, supporting equity, and promoting an environment that is welcoming, inclusive, and respectful. University officials requesting that a community member show their ID card should remain mindful that the request may raise questions and should be prepared to articulate the reasons for any specific request during the encounter. In addition, individuals requesting identification should also be prepared to present their own identification, if requested.

Security

As with most universities in urban settings, the security of persons and property is a primary concern of the School of the Environment. The university police and the fire marshal, in cooperation with the police and fire services of the City of New Haven, strive constantly to maintain a safe environment for the Yale community. At an orientation session during the summer modules, incoming students receive detailed information on emergency communications, personal safety tips, and other ways to protect themselves, equipment, and buildings.

Health Services

The Yale Health Center is located on campus at 55 Lock Street. The center is home to Yale Health, a not-for-profit, physician-led health coverage option that offers a wide variety of health care services for students and other members of the Yale community. Services include student health, gynecology, mental health, pediatrics, pharmacy, blood draw, radiology, a fifteen-bed inpatient care unit, and an acute care clinic with extended hours and telephone triage/guidance from a registered nurse twenty-four hours a day. Additional specialty services such as allergy, dermatology, orthopedics, a travel clinic, and more are available through Yale Health Hospitalization Specialty Coverage. Yale Health's services are detailed in the *Yale Health Student Handbook*, available through the Yale Health Member Services Department, 203.432.0246, or online at https://yalehealth.yale.edu/coverage/student-coverage.

ELIGIBILITY FOR SERVICES

All full-time Yale degree-candidate students who are paying at least half tuition are enrolled automatically for Yale Health Basic Student Health Services. Yale Health Basic Student Health Services is offered at no charge and includes preventive health and medical services in the departments of Student Health, Gynecology, Student Wellness,

and Mental Health & Counseling. In addition, treatment or triage for urgent medical problems can be obtained twenty-four hours a day through Acute Care.

Students on leave of absence, on extended study and paying less than half tuition, or enrolled per course credit are not eligible for Yale Health Basic Student Health Services but may enroll in Yale Health Student Affiliate Coverage. Students enrolled in the Division of Special Registration as nondegree special students or visiting scholars are not eligible for Yale Health Basic Student Health Services but may enroll in the Yale Health Billed Associates Plan and pay a monthly fee. Associates must register for a minimum of one term within the first thirty days of affiliation with the university.

Students not eligible for Yale Health Basic Student Health Services may also use the services on a fee-for-service basis. Students who wish to be seen fee-for-service must register with the Member Services Department. Enrollment applications for the Yale Health Student Affiliate Coverage, Billed Associates Plan, or Fee-for-Service Program are available from the Member Services Department.

All students who purchase Yale Health Hospitalization/Specialty Coverage (see below) are welcome to use specialty and ancillary services at Yale Health Center. Upon referral, Yale Health will cover the cost of specialty and ancillary services for these students. Students with an alternate insurance plan should seek specialty services from a provider who accepts their alternate insurance.

HEALTH COVERAGE ENROLLMENT

The university also requires all students eligible for Yale Health Basic Student Health Services to have adequate hospital insurance coverage. Students may choose Yale Health Hospitalization/Specialty Coverage or elect to waive the plan if they have other hospitalization coverage, such as coverage through a spouse or parent. The waiver must be renewed annually, and it is the student's responsibility to confirm receipt of the waiver by the university's deadlines noted below.

Yale Health Hospitalization/Specialty Coverage

For a detailed explanation of this plan, which includes coverage for prescriptions, see the *Yale Health Student Handbook*, available online at https://yalehealth.yale.edu/student-coverage.

Students are automatically enrolled and charged a fee each term on their Student Financial Services bill for Yale Health Hospitalization/Specialty Coverage. Students with no break in coverage who are enrolled during both the fall and spring terms are billed each term and are covered from August 1 through July 31. For students entering Yale for the first time, readmitted students, and students returning from a leave of absence who have not been covered during their leave, Yale Health Hospitalization/Specialty Coverage begins on the first day required to be on campus for program orientation. A student who is enrolled for the fall term only is covered for services through January 31; a student enrolled for the spring term only is covered for services through July 31.

Waiving Yale Health Hospitalization/Specialty Coverage Students are permitted to waive Yale Health Hospitalization/Specialty Coverage by completing an online waiver form at https://yhpstudentwaiver.yale.edu that demonstrates proof of alternate

coverage. It is the student's responsibility to report any changes in alternate insurance coverage to the Member Services Department within thirty days. Students are encouraged to review their present coverage and compare its benefits to those available under Yale Health. The waiver form must be filed annually and must be received by September 15 for the full year or fall term or by January 31 for the spring term only.

Revoking the Waiver Students who waive Yale Health Hospitalization/Specialty Coverage but later wish to be covered must complete and send a form voiding their waiver to the Member Services Department by September 15 for the full year or fall term, or by January 31 for the spring term only. Students who wish to revoke their waiver during the term may do so, provided they show proof of loss of the alternate insurance plan and enroll within thirty days of the loss of this coverage. Yale Health fees will not be prorated.

Yale Health Student Dependent Plans

A student may enroll the student's lawfully married spouse or civil union partner and/or legally dependent child(ren) under the age of twenty-six in one of three student dependent plans: Student + Spouse, Student + Child/Children, or Student Family Plan. These plans include services described in both Yale Health Basic Student Health Services and Yale Health Hospitalization/Specialty Coverage. Coverage is not automatic, and enrollment is by application. Applications are available from the Member Services Department or can be downloaded from the website (https://yalehealth.yale.edu/forms-and-guidelines) and must be renewed annually. Applications must be received by September 15 for full-year or fall-term coverage, or by January 31 for spring-term coverage only.

Yale Health Student Affiliate Coverage

Students on leave of absence, on extended study, or enrolled per course per credit; students paying less than half tuition; students enrolled in the EMBA program; students enrolled in the Broad Center MMS program; students enrolled in the PA Online program; and students enrolled in the EMPH program may enroll in Yale Health Student Affiliate Coverage, which includes services described in both Yale Health Basic and Yale Health Hospitalization/Specialty Coverage. Applications are available from the Member Services Department or can be downloaded from the website (https://yalehealth.yale.edu/forms-and-guidelines) and must be received by September 15 for full-year or fall-term coverage, or by January 31 for spring-term coverage only.

ELIGIBILITY CHANGES

Withdrawal A student who withdraws from the university during the first fifteen days of the term will be refunded the fee paid for Yale Health Hospitalization/Specialty Coverage. The student will not be eligible for any Yale Health benefits, and the student's Yale Health membership will be terminated retroactive to the beginning of the term. The medical record will be reviewed, and any services rendered and/or claims paid will be billed to the student on a fee-for-service basis. Assistance with identifying and locating alternative sources of medical care may be available from the Care Management Department at Yale Health. At all other times, a student who withdraws from the university will be covered by Yale Health for thirty days following

the date of withdrawal. Fees will not be prorated or refunded. Students who withdraw are not eligible to enroll in Yale Health Student Affiliate Coverage. Regardless of enrollment in Yale Health Hospitalization/Specialty Coverage, students who withdraw will have access to services available under Yale Health Basic Student Health Services (including Student Health, Athletic Medicine, Mental Health & Counseling, and Care Management) during these thirty days to the extent necessary for a coordinated transition of care.

Leaves of Absence Students who are granted a leave of absence are eligible to purchase Yale Health Student Affiliate Coverage for the term(s) of the leave. If the leave occurs on or *before* the first day of classes, Yale Health Hospitalization/Specialty Coverage will end retroactive to the start of the coverage period for the term. If the leave occurs anytime after the first day of classes, Yale Health Hospitalization/Specialty Coverage will end on the day the registrar is notified of the leave. In either case, students may enroll in Yale Health Student Affiliate Coverage. Students must enroll in Affiliate Coverage prior to the beginning of the term unless the registrar is notified after the first day of classes, in which case, the coverage must be purchased within thirty days of the date the registrar was notified. Fees paid for Yale Health Hospitalization/Specialty Coverage will be applied toward the cost of Affiliate Coverage. Coverage is not automatic, and enrollment forms are available at the Member Services Department or can be downloaded from the website (https://yalehealth.yale.edu/forms-and-guidelines). Fees will not be prorated or refunded.

Extended Study or Reduced Tuition Students who are granted extended study status or pay less than half tuition are not eligible for Yale Health Hospitalization/Specialty Coverage. They may purchase Yale Health Student Affiliate Coverage during the term(s) of extended study. This plan includes services described in both Yale Health Basic and Yale Health Hospitalization/Specialty Coverage. Coverage is not automatic, and enrollment forms are available at the Member Services Department or can be downloaded from the website (https://yalehealth.yale.edu/forms-and-guidelines). Students must complete an enrollment application for the plan prior to September 15 for the full year or fall term, or by January 31 for the spring term only.

Per Course Per Credit Students who are enrolled per course per credit are not eligible for Yale Health Hospitalization/Specialty Coverage. They may purchase Yale Health Student Affiliate Coverage during the term(s) of per course per credit enrollment. This plan includes services described in both Yale Health Basic and Yale Health Hospitalization/Specialty Coverage. Coverage is not automatic, and enrollment forms are available at the Member Services Department or can be downloaded from the website (https://yalehealth.yale.edu/forms-and-guidelines). Students must complete an enrollment application for the plan prior to September 15 for the full year or fall term or by January 31 for the spring term only.

For a full description of the services and benefits provided by Yale Health, please refer to the *Yale Health Student Handbook,* available online at https://yalehealth.yale.edu/resource/student-handbook and from the Member Services Department, 203.432.0246, 55 Lock Street, PO Box 208237, New Haven CT 06520-8237.

REQUIRED IMMUNIZATIONS

Proof of vaccination is a pre-entrance requirement determined by the Connecticut State Department of Public Health. Students who are not compliant with this state regulation will not be permitted to register for classes or move into the dormitories for the fall term, 2024. Please access the Incoming Student Vaccination Record form for graduate and professional students at https://yalehealth.yale.edu/new-student-health-requirements. Connecticut state regulation requires that this form be completed and signed, for each student, by a physician, nurse practitioner, or physician's assistant. The form must be completed, independent of any and all health insurance elections or coverage chosen. Once the form has been completed, the information must be entered into the Yale Vaccine Portal, and all supporting documents must be uploaded to https://campushealth.yale.edu/welcome-to-health-on-track. The final deadline is August 1.

COVID-19 As per recommendations from the Centers for Disease Control and Prevention, vaccination against COVID-19 is strongly encouraged, but not required, for incoming (matriculating) students. Students are asked to submit documentation of prior any primary series vaccinations or bivalent boosters that they have received through the Yale Health website, http://yalehealth.yale.edu. Vaccination requirements remain in place for healthcare workers and trainees, including students who work in settings where patient care is provided, or those who work with human research subjects in clinical settings. Those individuals must submit documentation of vaccination with a primary series and one booster (or, for those who have not yet received a primary series, one bivalent dose of vaccine) to the university or seek approval for a medical or religious exemption. Yale will accept any combination of COVID-19 vaccines that have received full approval or Emergency Use Authorization (EUA) by the U.S. Food and Drug Administration (FDA) or have been issued Emergency Use Listing (EUL) by the World Health Organization (WHO). International students who do not have access to WHO or FDA authorized or approved vaccines may be vaccinated at Yale Health on request.

Influenza All students are required to have flu vaccination in the fall term when it is made available to them by Yale Health.

Measles, Mumps, Rubella, and Varicella All students are required to provide proof of immunization against measles (rubeola), mumps, German measles (rubella), and varicella. Connecticut state regulation requires two doses of MMR (combined measles, mumps, and rubella) vaccine and two doses of varicella vaccine. The first dose must have been given after the student's first birthday; the second dose must have been given at least twenty-eight days after the first dose. If dates of vaccination are not available, titer results (blood test) demonstrating immunity may be substituted for proof of vaccination. The cost for all vaccinations and/or titers rests with the student, as these vaccinations are considered to be a pre-entrance requirement by the Connecticut State Department of Public Health. Students who are not compliant with this state regulation will not be permitted to register for classes or move into the dormitories for the fall term, 2024.

Quadrivalent Meningitis All students living in on-campus dormitory facilities (all undergraduate residential colleges and the following graduate dormitories: 254 Prospect Street, 272 Elm Street, 276 Prospect Street, Baker Hall, and Edward S. Harkness

Memorial Hall) must be vaccinated against meningitis. The only vaccines that will be accepted in satisfaction of the meningitis vaccination requirement are ACWY Vax, Menveo, Nimenrix, Menactra, Mencevax, and Menomune. The vaccine must have been given within five years of the first day of classes at Yale. Students who are not compliant with this state regulation will not be permitted to register for classes or move into the dormitories for the fall term, 2024. The cost for all vaccinations and/or titers rests with the student, as these vaccinations are a pre-entrance requirement by the Connecticut State Department of Public Health. Please note that the State of Connecticut does not require this vaccine for students who intend to reside on campus and are over the age of twenty-nine.

TB Screening The university requires tuberculosis screening for all incoming students who have lived or traveled outside of the United States within the past year.

Hepatitis B Series The university recommends that incoming students receive a series of three Hepatitis B vaccinations. Students may consult their health care provider for further information.

Student Accessibility Services

https://sas.yale.edu
203.432.2324

Student Accessibility Services (SAS) engages in an interactive process with Yale students undergraduate, graduate, and professional- school students with permanent conditions and/or temporary injuries, to determine reasonable and appropriate accommodations on a case-by-case basis. Students may initiate this process by requesting accommodations through the online accommodation request form available at https://yale-accommodate.symplicity.com/public_accommodation.

Engagement with SAS is confidential, and faculty/staff are notified of approved accommodations on a need-to-know basis only, except when required by law for health and safety reasons. Students may upload supporting documentation regarding their condition and request for accommodations with their accommodation request form. Documentation guidelines are available at https://sas.yale.edu/students/documentation-guidelines.

Resources to Address Discrimination, Harassment, and Sexual Misconduct

Yale is a community committed to fostering an environment of diversity, mutual respect, and intellectual discovery in which all members of the community can thrive. Acts of discrimination and harassment are contrary to the community standards and ideals of our university. Staff in the following offices work within the Yale community to promote respect, inclusivity, diversity, and equal opportunity, and are available to talk through situations you have witnessed or experienced, as well as to provide guidance.

When you have concerns or questions related to discrimination or harassment, you have a wide range of choices for support. You can reach out to a discrimination and harassment resource coordinator, or you can talk with others, such as a residential

college dean, dean of student affairs, or the Office of Institutional Equity and Accessibility.

If you'd like to talk with someone about sexual misconduct or sex-based discrimination, you can reach out directly to the deputy Title IX coordinator of your school or the Title IX Office. The Title IX website (https://titleix.yale.edu) is a helpful resource for additional questions or concerns about sex-based discrimination or sexual misconduct. If an individual is unsure of which resource to contact and wants to explore options for addressing sexual misconduct, the SHARE Center is a good place to start.

DISCRIMINATION AND HARASSMENT RESOURCE COORDINATORS

Office hours: 9 a.m.–5 p.m., M–F
https://dhr.yale.edu/discrimination-and-harassment-resource-coordinators

Discrimination and harassment resource coordinators (formerly deans' designees) have been identified by the dean of each college and school as community members with the responsibility to receive concerns and offer advice and guidance related to diversity and inclusion, discrimination and harassment, and equal opportunity. Discrimination and harassment resource coordinators may also help facilitate informal resolution. This may be an individual's best "first stop" in discussing a concern related to discrimination, harassment, or retaliation, particularly as discrimination and harassment resource coordinators will be knowledgeable about resources specific to their school or college.

OFFICE OF INSTITUTIONAL EQUITY AND ACCESSIBILITY

Office hours: 9 a.m.–5 p.m., M–F
203.432.0849
https://oiea.yale.edu

Any individual who would like to report a concern of discrimination, harassment, and/or retaliation may contact the Office of Institutional Equity and Accessibility (OIEA). OIEA staff are available to discuss concerns, University resources, and options for resolution, including informal resolution. Where appropriate, OIEA staff are also available to conduct investigations into complaints of discrimination, harassment, and/or retaliation committed by faculty or staff members. Talking with someone at OIEA about a concern or making a complaint does not automatically launch an investigation. It can, however, be an important step to alerting the university about a concern and getting assistance to resolve it.

SHARE: INFORMATION, ADVOCACY, AND SUPPORT

55 Lock Street, Lower Level
Appointments: 9 a.m.–5 p.m., M–F
24/7 on-call service (for time-sensitive matters): 203.432.2000
https://sharecenter.yale.edu

SHARE, the Sexual Harassment and Assault Response and Education Center, has trained counselors available to members of the Yale community who wish to discuss any past or current experience of sexual misconduct involving themselves or someone they care about. SHARE services are confidential and can be anonymous if desired. SHARE can provide professional help with medical and health issues (including

accompanying individuals to the hospital or the police), as well as ongoing counseling and support for students. SHARE works closely with the University-Wide Committee on Sexual Misconduct, the Title IX Office, the Yale Police Department, and other campus resources and can provide assistance with initiating a complaint.

If you wish to make use of SHARE's services, you can call the SHARE number (203.432.2000) at any time for a phone consultation or to set up an in-person appointment. Some legal and medical options are time-sensitive, so if you have experienced an assault, we encourage you to call SHARE and/or the Yale Police as soon as possible.

TITLE IX COORDINATORS

203.432.6854
Office hours: 9 a.m.–5 p.m., M–F
https://titleix.yale.edu

Title IX of the Education Amendments of 1972 protects people from sex discrimination in educational programs and activities at institutions that receive federal financial assistance. Sex discrimination includes sexual harassment, sexual assault, and other forms of sexual misconduct. The university is committed to providing an environment free from discrimination on the basis of sex or gender.

Yale College, the Graduate School of Arts and Sciences, and the professional schools have each designated one or more deputy Title IX coordinators, who work closely with the university Title IX Office and university Title IX Coordinator Elizabeth Conklin. Coordinators respond to and address concerns, provide information on available resources and options, track and monitor incidents to identify patterns or systemic issues, deliver prevention and educational programming, and address issues relating to gender-based discrimination and sexual misconduct within their respective schools. Coordinators also work with pregnant and parenting individuals to coordinate needed accommodations and to respond to instances of discrimination. Discussions with a deputy Title IX coordinator are private and information is only shared with other university officials on a need-to-know basis. In the case of imminent threat to an individual or the community, the coordinator may need to consult with other administrators or take action in the interest of safety. The coordinators also work closely with the SHARE Center, the University-Wide Committee on Sexual Misconduct, and the Yale Police Department.

UNIVERSITY-WIDE COMMITTEE ON SEXUAL MISCONDUCT

203.432.4449
Office hours: 9 a.m.–5 p.m., M–F
https://uwc.yale.edu

The University-Wide Committee on Sexual Misconduct (UWC) is an internal disciplinary board for complaints of sexual misconduct available to students, faculty, and staff across the university, as described in the committee's procedures. The UWC provides an accessible, representative, and trained body to fairly and expeditiously address formal complaints of sexual misconduct. UWC members can answer inquiries about procedures and the university sexual misconduct policy. The UWC is composed of faculty, senior administrators, and graduate and professional students drawn from

throughout the university. UWC members are trained to observe strict confidentiality with respect to all information they receive about a case.

YALE POLICE DEPARTMENT

101 Ashmun Street
24/7 hotline: 203.432.4400
https://your.yale.edu/community/public-safety/yale-police-department

The Yale Police Department (YPD) operates 24/7 and is composed of highly trained, professional officers. The YPD can provide information on available victims' assistance services and also has the capacity to perform full criminal investigations. If you wish to speak with the sensitive crimes and support coordinator, they can be reached at 203.432.9547. Informational sessions are available with the sensitive crimes and support coordinator to discuss safety planning, available options, etc. The YPD works closely with the New Haven State's Attorney, the SHARE Center, the Title IX Office, and various other departments within the university. Talking to the YPD does not commit you to submitting evidence or pressing charges; with few exceptions, all decisions about how to proceed are up to you.

Office of International Students and Scholars

http://oiss.yale.edu
203.432.2305

The Office of International Students and Scholars (OISS) coordinates services and support for more than 6,300 international students, faculty, staff, and their dependents at Yale. OISS assists international students and scholars with issues related to employment, immigration, personal and cultural adjustment, and serves as a source of general information about living at Yale and in New Haven. As Yale University's representative for immigration concerns, OISS helps students and scholars obtain and maintain legal nonimmigrant status in the United States.

OISS programs, like daily English conversation groups, the Understanding America series, DEIB workshops, bus trips, and social events, provide an opportunity to meet members of Yale's international community and become acquainted with the many resources of Yale University and New Haven. Spouses and partners of Yale students and scholars will want to get involved with the International Spouses and Partners at Yale (ISPY) community, which organizes a variety of programs and events.

The OISS website provides useful information to students and scholars prior to and upon arrival in New Haven, as well as throughout their stay at Yale. International students, scholars, and their families and partners can connect with OISS and the Yale international community virtually through Facebook.

OISS is a welcoming venue for students and scholars who want to check their email, grab a cup of coffee, and meet up with a friend or colleague. The International Center is OISS's home on Yale campus and is located at 421 Temple Street. The International Center provides meeting space for student groups and a venue for events organized by both student groups and university departments. For more information about our

hours, directions, and how to reserve space at OISS, please visit https://oiss.yale.edu/about/hours-directions-parking.

Libraries

Yale University Library comprises collections, spaces, technology, and people. The collections contain fifteen million print and electronic volumes in more than a dozen libraries and locations, including Sterling Memorial Library, Beinecke Rare Book and Manuscript Library, and the Anne T. and Robert M. Bass Library. Yale Library's resources also include extensive licensed e-resources and extraordinary special collections that represent the diversity of the human experience in forms ranging from ancient papyri to early printed books, rare film and music recordings, and a growing body of born-digital materials. More than five hundred staff members facilitate teaching, research, and practice with deep subject-area knowledge as well as expertise in digital humanities, geographic information systems, and the use and management of research data. Yale Library's preservation and conservation specialists develop and apply leading-edge technology to maintain collections, providing critical support for increased access to collections, an expanding exhibition program, and Yale's emphasis on teaching with primary sources. For more information, visit https://library.yale.edu.

Graduate and Professional Student Senate (GPSS)

The Graduate and Professional Student Senate (GPSS) is composed of student-elected representatives from each of the fourteen graduate and professional schools at Yale. Any student enrolled in these schools is eligible to run for a senate seat during fall elections. As a governing body, the GPSS advocates for student concerns and advancement within Yale, represents all graduate and professional students to the outside world, and facilitates interaction and collaboration among the schools through social gatherings, academic and professional events, and community service. GPSS meetings occur on alternating Thursdays and are open to the entire graduate and professional school community, as well as representatives from the Yale administration. GPSS also oversees the management of the Gryphon, a graduate and professional student center, located at 204 York Street. The center provides office and event space for GPSS and other student organization activities, funds student groups, and houses Gryphon's Pub, open nightly. For more information, please visit https://gpsenate.yale.edu.

Cultural and Recreational Opportunities

Keep up to date about university news and events by subscribing to the Yale Today e-newsletter (https://news.yale.edu/subscribe-enewsletter), YaleNews (http://news.yale.edu), the Yale Calendar of Events (http://calendar.yale.edu), and the university's Facebook, Twitter, Instagram, LinkedIn, and YouTube channels.

The Yale Peabody Museum (https://peabody.yale.edu), founded in 1866, houses more than fourteen million specimens and objects in ten curatorial divisions. The Museum's galleries, newly renovated in 2024, display thousands of objects, including the first Brontosaurus, Stegosaurus, and Triceratops specimens ever discovered.

The Yale University Art Gallery (https://artgallery.yale.edu) is one of the largest museums in the country, holding nearly 300,000 objects and welcoming visitors from around the world. Galleries showcase artworks from ancient times to the present, including vessels from Tang-dynasty China, early Italian paintings, textiles from Borneo, treasures of American art, masks from Western Africa, modern and contemporary art, ancient sculptures, masterworks by Degas, van Gogh, and Picasso, and more.

The Yale Center for British Art (https://britishart.yale.edu) is a museum that houses the largest collection of British art outside the United Kingdom, encompassing works in a range of media from the fifteenth century to the present.

More than five hundred musical events take place at the university during the academic year, presented by the School of Music (https://music.yale.edu/concerts), the Morris Steinert Collection of Musical Instruments (https://music.yale.edu/concerts-events-collection), and the Institute of Sacred Music (https://ism.yale.edu/events/upcoming-events), among others.

For theatergoers, Yale offers a wide range of dramatic productions at such venues as the Yale Repertory Theatre (https://yalerep.org); the University Theater and Iseman Theater (https://drama.yale.edu/productions); and Yale Cabaret (https://www.yalecabaret.org).

The religious and spiritual resources of the university serve all students, faculty, and staff of all faiths. Additional information is available at http://chaplain.yale.edu.

The Payne Whitney Gymnasium, one of the most elaborate and extensive indoor athletic facilities in the world, is open to Yale undergraduates and graduate and professional school students at no charge throughout the year. Memberships at reasonable fees are available for faculty, employees, postdocs, visiting associates, alumni, and members of the New Haven community. Additional information is available at https://sportsandrecreation.yale.edu.

During the year, various recreational opportunities are available at the David S. Ingalls Rink, the McNay Family Sailing Center in Branford, the Yale Tennis Complex, and the Yale Golf Course. All members of the Yale community and their guests may participate at each of these venues for a modest fee. Information is available at https://myrec.yale.edu.

The Yale Outdoor Education Center (OEC) in East Lyme Yale is open to students, faculty, staff, and alumni. The OEC, which consists of 1,500 acres surrounding a mile-long lake in East Lyme, Connecticut. The facility includes overnight cabins and campsites, a pavilion and dining hall available for group rental, and a waterfront area with supervised swimming, rowboats, canoes, stand-up paddleboards, and kayaks. For more information, visit https://sportsandrecreation.yale.edu/outdoor-education-center-0.

Approximately fifty club sports are offered at Yale, organized by the Office of Club Sports and Outdoor Education (https://sportsandrecreation.yale.edu/club-sports-intramural-sports/club-sports). Most of the teams are for undergraduates, but a few are available to graduate and professional school students.

Throughout the year, Yale graduate and professional school students have the opportunity to participate in numerous intramural sports activities, including volleyball, soccer, and softball in the fall; basketball and volleyball in the winter; softball, soccer, ultimate, and volleyball in the spring; and softball in the summer. With few exceptions, all academic-year graduate-professional student sports activities are scheduled on weekends, and most sports activities are open to competitive, recreational, and coeducational teams. More information is available at https://myrec.yale.edu.

ENROLLMENT

MASTER'S DEGREES CONFERRED, 2024

Master of Environmental Management

Jennifer Adachi
Samantha Almonacid
Rakan Alonazy
Chloe Ames
Alberto Andrade
Cristina Baily
KhaYr Barry
Jorrit Becking
Franklin Bertellotti
Cassiane Bohn Au
Liz Bridgwater
Grace Buie
Tanner Burgdorf
Sirui Chen
Alex Cherry
Justin Chow
Kayleigh Crabb
Colin Custer
MJ Cyr-Ohngemach
Catharina Damrell
Arcadia Davies
Gabe Desmond
Victoria Dombrowik
Raysieo Duakin
Carl Philip Dybwad
Ian French
Nailah Garard
Pratima Garg
Allie Garrett
Wes Gobar
Lauren Gomez Cullen
Daniel Gonzalez Pena
Danny Haber
Jonathon Haist
Jie Min Heng
Gina Hervey
Tais Idi-Infante
Ayoosh Jadhav
Maria Jiang
Sofia John
Rennie Jones
Ayushi Khan

Hwayeon Lee
Anna Lenaker
Angel Li
Xiaoshu Lin
Violet Low-Beinart
Jamie Lowrey
Katie Lund
Brooke Mercaldi
Harrison Meyer
Gabriella Mickel
Lorena Miranda Guevara
Matias Montaldo Barral
Christy Mueller
Claire Nichols
Jigchen Norbu
Bennett Olupo
August Organschi
Lu Parra Arce
Sangam Paudel
Lauren Phipps
Sophia Ptacek
Jiarong Qi
Jonathan Rak
Jeremy Ravenelle
Anika Reynar
Connor Rockett
Anamaria Rodriguez Garcia
Calla Rosenfeld
Eduardo Rotama
Carolina Sanchez Badini
Sydney Savard
Leopold Schwarz Schutte
Rowan Sharkey
Elana Shi
Jinsui Song
Anna Stemberger
Sonora Taffa
Alison Thompson
Natalia Turkel
Carlos Velazquez
Bisrantee Wagle
Yinhao Wang
Josie Watson
Alex Weyerhaeuser
Jin Wu
Benjamin Yang
Quincy Yangh
Susana Yepes Bernal
Cate York

Master of Environmental Science

Mizzy Almaazmi
Md Ashraf
Soma Barsen
Kate Birney
Anne Frances Durfee
Phoebe Ferguson
Lily Fillwalk
Xiyao Fu
Maude Gibbins
Germar Gonzalez
Vincent Haller
Zachary Herring
Junhan Hu
Julia Jacobson
Zoe Lee-Park
Jinyue Li
Jack Markowitz
Esaac Mazengia
Katie Michels
Emil Moldovan
PwintPhyu Nandar
Elizabeth Nowlin
Gino Rivera Bulnes
Erin Shives
Bibek Shrestha
Eliana Stone
Jimena Terrazas Lozano
Joseph Toman
Kathleen Voight
Les Welker
Amanda Wik
Sam Wilson
Mingyu Zhang
Nikki Zhang

Master of Forest Science

Michael Culbertson
Kenna Ellis
Kumba Jammeh
Amaya Sathurusinghe
Yeim We

Master of Forestry

Shaylyn Austin
Jake Barker

Julia Chen
Mary Katherine DeWane
Grace Dominic
Alice Gerow
Tristan Irwin
Jane Jacoby
Jennifer Jung
Amelia Napper
Bernard Nyanzu
Austin Pruitt
Diana Satkauskas
Hayden Stebbins
Zane Weinberger
Brandon Wilson Radcliffe

PH.D. DEGREES CONFERRED, DECEMBER 2023

Mary Burak
Paul Burow
Hayon Michelle Choi
Yufang Gao
Matthew David Gordon
Vanessa Koh

PH.D. DEGREES CONFERRED, MAY 2024

Aleca Borsuk
Aishwarya Iyer
Katherine Downey (Kaggie) Orrick
Helen Siegel
Wen Zhou

STUDENTS WORKING TOWARD MASTER'S DEGREES

Master of Environmental Management

Zhibek Abildayeva
Harshit Agrawal
Omar Al-Farisi
George Aniegbunem
Grace Aranow
Benedicta Asiedu
Clare Auld-Brokish
Reni Axelrod
Celia Bateman
McKenzie Blaine
Jack Boger
Olivia Brinks
Eli Calhoun
Isaac Carroo
Lucia Castellares Tello
Mandakini Chandra

Monica Charletta
Ethan Cypull
Christian Dadzie
Katie Davis
Zaya Delgerjargal
Margo Dietrich
Sofie di Tommaso
Anisha Dongol
Allie Douma
Natalia Espinosa Caballero
Angela Ferguson
Grace Ferguson
Caitlyn Finnegan
Rita Flanagan
Jorge Forero Fajardo
James Freeman
Sophie Friedfeld-Gebaide
Urja Gada
Nikita Gardi
Airi Gavan
Sereena Gee
Kate Gehrke
Alaina Geibig
Kajol Gupta
Chinmaya H M
Josh Hernandez
Guan Huang
Alissa Huntington
John Imperato
Nicole Israel-Meyer
Mahica Iyer
Shubh Jain
Iris Jiang
Fiacro Jimenez Ramirez
Clair Jung
Kemi Kakonge Ruyondo
Josh Kesling
Brittaney Key
Daniel Krupa
Emily Lin
Changran Liu
Mike Liu
Ali Luchs
Aidan Lyde
Jacob Lyon
Dani Marangoni-Simonsen
Dennis Martey
Mimi Martinez Okhuysen

Marshall McCall
Berkana McDowell
Courtney Megerian
Aqsa Mengal
Phoebe Merrick
Miranda Miller
Nasra Mohamed
Oswaldo Morales Solorzano
Daniel Morgan
Farzana Mubassira
Jimmy Musili
Nanako Nagai
Rose Nagele
Erin Noël
Onolunose Oko-Ose
Nick Page
Laura Polanco Valdez
Masooma Rahmaty
Rinchui Raman
Victoria Ramirez
Juli Raventos Knohr
Alisa Reiner
Olivia Rhodes
Colby Richardson
Steven Ring
Henry Ritter
Remey Schneider
Elisabeth Schreiber
Sam Schulteis
Caroline Sgaglione
Christina Shaffer
Ambica Shalvi
Stefanía Sibille Grández
Noah Silvestry
Srishti Singh
Tabitha Sookdeo
Truett Sparkman
Dimitria Spathakis
Felipe Storch de Oliveira
Hadley Tallackson
Zachary Taylor
Abby Thomas
Ingrid Thyr
Isabela Valencia
Josie Valette
Stephanie von Ungern Sternberg Prufer
Zongkai Wang
Nate Warszawski

Tatiana Watson Murcia
Alex Wells
Katya Wendt
Dula Wereti
Allie Wiegel
Yichen Zhang

Master of Environmental Science

Rowan Baker
Mario Caller Castro
Reni Chng
Andre Eanes
Sophia Hampton
Jack Hatajik
Skye Hellenkamp
Tara Hoda
Dominik Juling
Anjuri Kakkar
Enar Leferink
Arjun Malhotra
Ky Miller
Sofi Montalvo Yanez
Kara Lyn Moran
Shayna Moss
Esther Donald Mwakisambwe
Jeremy Pustilnik
Ananya Rao
Shannon Regan
Anastasia Rubio
Athena Sofides
Botao Zhao

Master of Forest Science

Yike Chen
Odatha Kotagama
Julianne Latynski
Dane McKittrick
Sophie Roberts
Sam Tower

Master of Forestry

Cindy Cifuentes
Jackson Cooper
Aaron Donato
Will Gardner
Landry Guillen
Jamila Jaxaliyeva

Baboucarr Joof
Owen Klein
Sean Mahoney
Nate McMullen
Kate Regan-Loomis
Leah Snavely
Tashi Tashi
Hannah Vase

STUDENTS WORKING TOWARD PH.D. DEGREES

Daniela Acosta
Nadia Batool Ahmad
Yara Abdulrahman Alshwairikh
Kristy Marie Barnes Ferraro
Nadav Bendavid
Aishwarya Bhandari
Logan Billet
Molly Blondell
Amma Asantewaa Agyei Boakye
Samara Meade Brock
Sarah Louise Brown
Jesse Bryant
Lachlan Byrnes
Mariana Del Mar Camacho Fernandez
Scott Matthew Carpenter
Lelin (Eileen) Chen
Damaris Avery Chenoweth
Ilaria Cimadori
Jacob Hunter Craft
Andie Creel
Michael Culbertson
Fransha Dace
Arun Vinod Dayanandan
Apurva Venkata Naga Sundara Duddu
Jasper Eastman
Aymane Eddahmani
Logan Mace Emlet
Alicia Renee Entem
Lucas Epstein
Christian Espinosa Schatz
Skylar Fetter
Manuel Romeo Flores III
Gabriel Gadsden
Siria Gamez
Jonathan Gewirtzman
Leo Maria Goldsmith
Edgardo Gonzalez
Gracia Hadiwidjaja

Thomas Harris
Chris Hebdon
Momoko Ishii
Kazi Nazrul Islam
Dylan Robert Judd
Samuel Anthony Jurado
Koichi Steven Kanaoka
Lav Kanoi
Aishwarya Kazi
Prajna Cauvery Kotera Pooviah
Jennifer Kroeger
Jocelyn La Fleur
Simon Fridtjof Lang
Manon Lefèvre
Kennedy Lemayian Leneuiyia
Brandon Lewis
Reid Lewis
Jinge Li
Janey Rose Lienau
Richa Mahtta
Urmila Basu Mallick
Ross Duntley Martin
Ella Rose McCoshan
Ambria McDonald
Katherine Adelle Meier
Alyssa Menz
Tobias David Muellers
Sydney Nelson
Laura Obando Cabrera
Lauren Anne Oliver
Jacob Donald James Peters
Maike Pfeiffer
Alexander Polussa
Julia Marie Portmann
Meredith Reba
Rachel Renne
Robert A. Rioux IV
Benjamin Mugtari Saalidong
Raffaele Sindoni Saposhnik
Sathurusinghe Arachchige Dewni Amaya Sathurusinghe
Muhammad Shayan
Karam Sheban
Greg Sieczkiewicz
Rohan Daniel Simkin
Evan Singer
Audrey Margarita Smith
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Rory Stewart

Eliana Stone
Akshay Surendra
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Samantha Michelle Tracy
Destiny Treloar
Andres Eduardo Triana Solorzano
Alma Trujillo Miranda
Shou En (Samuel) Tsao
Uthara Vengrai
Andrew Johnathan Vogt
Brant Joseph Walker
Hannah Wang
Yichen Wang
Shuo Wei
Katy Mary Wilson
David J. Woodbury
Youyi Xu
Shoko Yamada
Yichen Yang
Quinn Zacharias
Joseph Zailaa
Eileen Ai Lin Zhang
Keer Zhang
Mingyu Zhang
Yong Zhao
Laura Zwicker

M.E.SC./M.F.S. THESIS RESEARCH NUMBERS

Faculty	ENV Thesis Research Number
Anisfeld, Shimon	3010
Ashton, Mark	3020
Bell, Michelle	3035
Benoit, Gaboury	3040
Bradford, Mark	3054
Brando, Paulo	3060
Brodersen, Craig	3072
Burke, Ingrid	3073
Carpenter, Carol	3110
Chertow, Marian	3130
Comita, Liza	3143
Doolittle, Amity	3158
Dove, Michael	3160
Duguid, Marlyse	3175
Esty, Daniel	3180
Farrell, Justin	3185
Fenichel, Eli	3195
Gillingham, Kenneth	3215
Gregoire, Timothy	3240
Harris, Nyeema	3246
Kotchen, Matthew	3257
Lauenroth, William	3261
Lee, Xuhui	3260
Leiserowitz, Anthony	3263
Malone, Sparkle	3290
Marlon, Jennifer	3300
Mendelsohn, Robert	3320
Orefice, Joseph	3345
Queenborough, Simon	3350
Rao, Narasimha	3363
Raymond, Peter	3364
Saiers, James	3390
Sanford, Luke	3393
Schmitz, Oswald	3400
Seto, Karen	3408
Skelly, David	3420

Taylor, Dorceta	3450
Torres, Gerald	3462
Vedder, Amy	3469
Wargo, John	3470
Yao, Yuan	3488
Zimmerman, Julie	3500

PROJECT COURSES

Faculty	ENV Project Course Number
Anastas, Paul	1008
Anisfeld, Shimon	1010
Ashton, Mark	1020
Bacher, Jessica	1030
Bell, Michelle	1035
Benoit, Gaboury	1040
Berlyn, Graeme	1050
Boyd, Peter	1052
Bradford, Mark	1054
Brando, Paulo	1060
Brodersen, Craig	1072
Carpenter, Carol	1110
Chertow, Marian	1130
Comita, Liza	1143
Cort, Todd	1147
DeCew, Stuart	1153
Decker, Mary Beth	1155
Doolittle, Amity	1158
Dove, Michael	1160
Duguid, Marlyse	1175
Esty, Daniel	1180
Farrell, Justin	1185
Fenichel, Eli	1195
Garen, Eva	1203
Gelobter, Michel	1208
Gentry, Bradford	1210
Gillingham, Kenneth	1215
Gregoire, Timothy	1240
Gross, Daniel	1243
Harris, Nyeema	1246
Klee, Robert	1253
Klinkenborg, Verlyn	1256
Kooris, David	1255
Kops, Melissa	1256
Kotchen, Matthew	1257
Kuebbing, Sara	1258
Kysar, Douglas	1259

Lauenroth, William	1261
Lee, Xuhui	1260
Leiserowitz, Anthony	1263
Lifset, Reid	1270
Malone, Sparkle	1290
Marlon, Jennifer	1300
Mendelsohn, Robert	1320
Montagnini, Florencia	1330
Murphy-Dunning, Colleen	1335
Narasimha, Rao	1363
Orefice, Joseph	1345
Queenborough, Simon	1350
Raymond, Peter	1364
Reuning-Scherer, Jonathan	1380
Saiers, James	1390
Salazar Miranda, Arianna	1392
Sanford, Luke	1393
Schmitz, Oswald	1400
Schwarz, Andrew	1402
Seto, Karen	1408
Skelly, David	1420
Taylor, Dorceta	1450
Tomlin, Dana	1460
Torres, Gerald	1462
Vedder, Amy	1469
Wargo, John	1470
Weber, Albert William	1473
Wood, Stephen	1475
Yao, Yuan	1488
Zimmerman, Julie	1500

THE WORK OF YALE UNIVERSITY

The work of Yale University is carried on in the following schools:

Yale College Est. 1701. Courses in humanities, social sciences, natural sciences, mathematical and computer sciences, and engineering. Bachelor of Arts (B.A.), Bachelor of Science (B.S.).

For additional information, please visit https://admissions.yale.edu, email student.questions@yale.edu, or call 203.432.9300. Postal correspondence should be directed to Office of Undergraduate Admissions, Yale University, PO Box 208234, New Haven CT 06520-8234.

Graduate School of Arts and Sciences Est. 1847. Courses for college graduates. Master of Arts (M.A.), Master of Science (M.S.), Master of Philosophy (M.Phil.), Doctor of Philosophy (Ph.D.).

For additional information, please visit https://gsas.yale.edu, email graduate.admissions@yale.edu, or call the Office of Graduate Admissions at 203.432.2771. Postal correspondence should be directed to Office of Graduate Admissions, Yale Graduate School of Arts and Sciences, PO Box 208236, New Haven CT 06520-8236.

School of Medicine Est. 1810. Courses for college graduates and students who have completed requisite training in approved institutions. Doctor of Medicine (M.D.). Postgraduate study in the basic sciences and clinical subjects. Five-year combined program leading to Doctor of Medicine and Master of Health Science (M.D./M.H.S.). Combined program with the Graduate School of Arts and Sciences leading to Doctor of Medicine and Doctor of Philosophy (M.D./Ph.D.). Master of Medical Science (M.M.Sc.) from the Physician Associate Program and the Physician Assistant Online Program.

For additional information, please visit https://medicine.yale.edu/edu, email medical.admissions@yale.edu, or call the Office of Admissions at 203.785.2643. Postal correspondence should be directed to Office of Admissions, Yale School of Medicine, 367 Cedar Street, New Haven CT 06510.

Divinity School Est. 1822. Courses for college graduates. Master of Divinity (M.Div.), Master of Arts in Religion (M.A.R.). Individuals with an M.Div. degree may apply for the program leading to the degree of Master of Sacred Theology (S.T.M.).

For additional information, please visit https://divinity.yale.edu, email div.admissions@yale.edu, or call the Admissions Office at 203.432.5360. Postal correspondence should be directed to Admissions Office, Yale Divinity School, 409 Prospect Street, New Haven CT 06511.

Law School Est. 1824. Courses for college graduates. Juris Doctor (J.D.). For additional information, please visit https://law.yale.edu, email admissions.law@yale.edu, or call the Admissions Office at 203.432.4995. Postal correspondence should be directed to Admissions Office, Yale Law School, PO Box 208215, New Haven CT 06520-8215.

Graduate Programs: Master of Laws (LL.M.), Doctor of the Science of Law (J.S.D.), Master of Studies in Law (M.S.L.). Doctor of Philosophy (Ph.D.) awarded by the Graduate School of Arts and Sciences. For additional information, please visit https://law.yale.edu, email gradpro.law@yale.edu, or call the Graduate Programs Office at 203.432.1696. Postal correspondence should be directed to Graduate Programs, Yale Law School, PO Box 208215, New Haven CT 06520-8215.

School of Engineering & Applied Science Est. 1852. Courses for college graduates. Master of Science (M.S.) and Doctor of Philosophy (Ph.D.) awarded by the Graduate School of Arts and Sciences.

For additional information, please visit https://seas.yale.edu, email grad.engineering@yale.edu, or call 203.432.4252. Postal correspondence should be directed to Office of Graduate Studies, Yale School of Engineering & Applied Science, PO Box 208292, New Haven CT 06520-8292.

School of Art Est. 1869. Professional courses for college and art school graduates. Master of Fine Arts (M.F.A.).

For additional information, please visit http://art.yale.edu, email artschool.info@yale.edu, or call the Office of Academic Administration at 203.432.2600. Postal correspondence should be directed to Office of Academic Administration, Yale School of Art, PO Box 208339, New Haven CT 06520-8339.

School of Music Est. 1894. Graduate professional studies in performance and composition. Certificate in Performance (CERT), Master of Music (M.M.), Master of Musical Arts (M.M.A.), Artist Diploma (A.D.), Doctor of Musical Arts (D.M.A.).

For additional information, please visit https://music.yale.edu, email gradmusic.admissions@yale.edu, or call the Office of Admissions at 203.432.4155. Postal correspondence should be directed to Yale School of Music, PO Box 208246, New Haven CT 06520-8246.

School of the Environment Est. 1900. Courses for college graduates. Master of Forestry (M.F.), Master of Forest Science (M.F.S.), Master of Environmental Science (M.E.Sc.), Master of Environmental Management (M.E.M.). Doctor of Philosophy (Ph.D.) awarded by the Graduate School of Arts and Sciences.

For additional information, please visit https://environment.yale.edu, email admissions.yse@yale.edu, or call the Office of Admissions at 800.825.0330. Postal correspondence should be directed to Office of Admissions, Yale School of the Environment, 300 Prospect Street, New Haven CT 06511.

School of Public Health Est. 1915. Courses for college graduates. Master of Public Health (M.P.H.). Master of Science (M.S.) and Doctor of Philosophy (Ph.D.) awarded by the Graduate School of Arts and Sciences.

For additional information, please visit https://publichealth.yale.edu, email ysph.admissions@yale.edu, or call the Admissions Office at 203.785.2844.

School of Architecture Est. 1916. Courses for college graduates. Professional and post-professional degree: Master of Architecture (M.Arch.); nonprofessional degree: Master

of Environmental Design (M.E.D.). Doctor of Philosophy (Ph.D.) awarded by the Graduate School of Arts and Sciences.

For additional information, please visit https://www.architecture.yale.edu, email gradarch.admissions@yale.edu, or call 203.432.2296. Postal correspondence should be directed to the Yale School of Architecture, PO Box 208242, New Haven CT 06520-8242.

School of Nursing Est. 1923. Courses for college graduates. Master of Science in Nursing (M.S.N.), Post Master's Certificate (P.M.C.), Doctor of Nursing Practice (D.N.P.). Doctor of Philosophy (Ph.D.) awarded by the Graduate School of Arts and Sciences.

For additional information, please visit https://nursing.yale.edu or call 203.785.2389. Postal correspondence should be directed to Yale School of Nursing, Yale University West Campus, PO Box 27399, West Haven CT 06516-0972.

David Geffen School of Drama Est. 1925. Courses for college graduates and certificate students. Master of Fine Arts (M.F.A.), Certificate in Drama, Doctor of Fine Arts (D.F.A.).

For additional information, please visit https://drama.yale.edu, email dgsd.admissions@yale.edu, or call the Registrar/Admissions Office at 203.432.1507. Postal correspondence should be directed to David Geffen School of Drama at Yale University, PO Box 208325, New Haven CT 06520-8325.

School of Management Est. 1976. Courses for college graduates. Master of Business Administration (M.B.A.), Master of Advanced Management (M.A.M.), Master of Management Studies (M.M.S.). Doctor of Philosophy (Ph.D.) awarded by the Graduate School of Arts and Sciences.

For additional information, please visit https://som.yale.edu. Postal correspondence should be directed to Yale School of Management, PO Box 208200, New Haven CT 06520-8200.

Jackson School of Global Affairs Est. 2022. Courses for college graduates. Master in Public Policy (M.P.P.) and Master of Advanced Study (M.A.S.).

For additional information, please visit https://jackson.yale.edu, email jackson.admissions@yale.edu, or call 203.432.6253.

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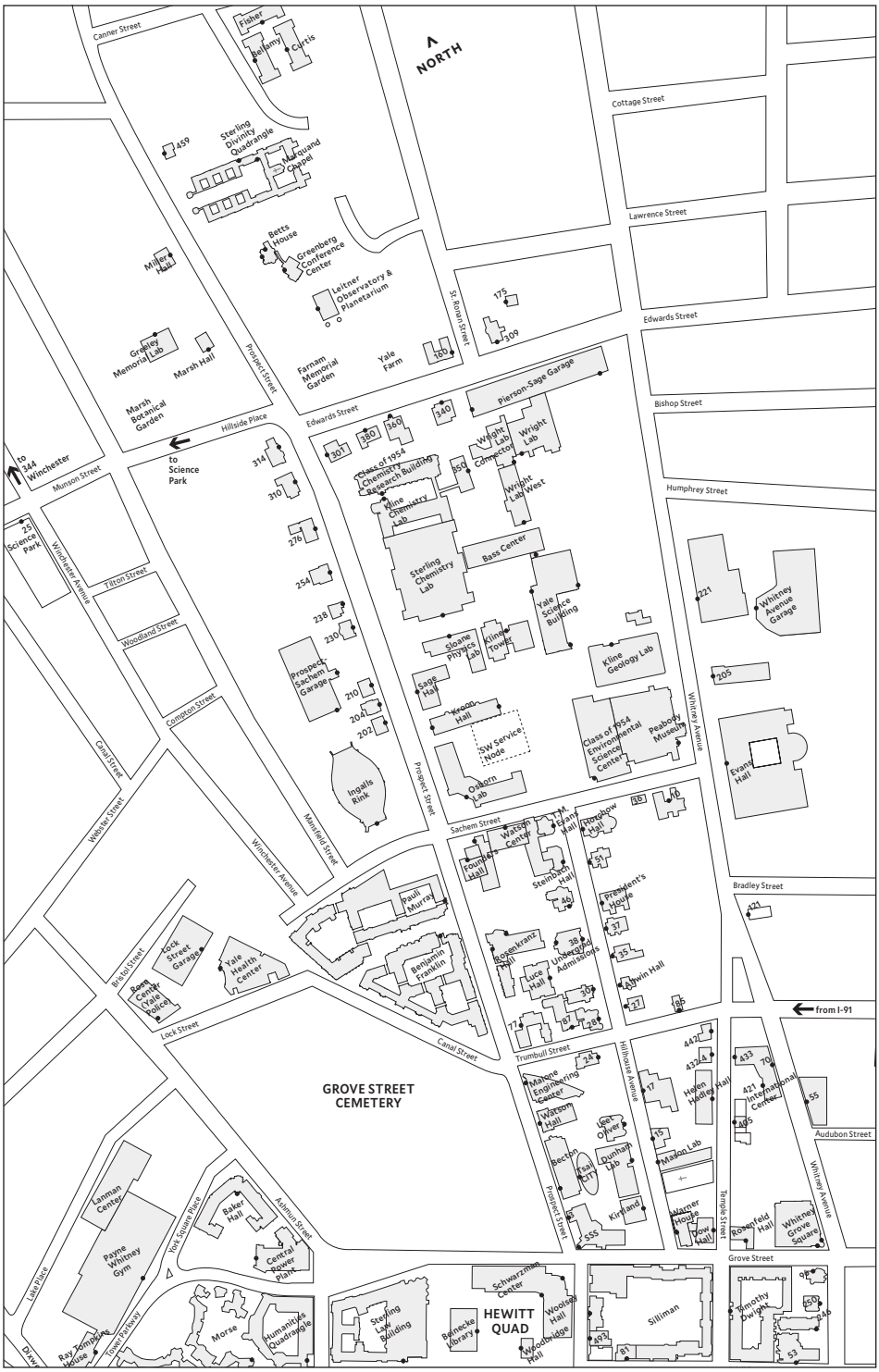

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YALE UNIVERSITY CAMPUS SOUTH & YALE MEDICAL CENTER

The university is committed to affirmative action under law in employment of women, minority group members, individuals with disabilities, and protected veterans. Additionally, in accordance with Yale's Policy Against Discrimination and Harassment (https://your.yale.edu/policies-procedures/policies/9000-yale-university-policy-against-discrimination-and-harassment), Yale does not discriminate in admissions, educational programs, or employment against any individual on account of that individual's sex; sexual orientation; gender identity or expression; race; color; national or ethnic origin; religion; age; disability; status as a special disabled veteran, veteran of the Vietnam era, or other covered veteran; or membership in any other protected classes as set forth in Connecticut and federal law.

Inquiries concerning these policies may be referred to the Office of Institutional Equity and Accessibility, 203.432.0849; equity@yale.edu. For additional information, please visit https://oiea.yale.edu.

Title IX of the Education Amendments of 1972 protects people from sex discrimination in educational programs and activities at institutions that receive federal financial assistance. Questions regarding Title IX may be referred to the university's Title IX coordinator, Elizabeth Conklin, at 203.432.6854 or at titleix@yale.edu, or to the U.S. Department of Education, Office for Civil Rights, 8th Floor, 5 Post Office Square, Boston MA 02109-3921; tel. 617.289.0111, TDD 800.877.8339, or ocr.boston@ed.gov. For additional information, including information on Yale's sexual misconduct policies and a list of resources available to Yale community members with concerns about sexual misconduct, please visit https://titleix.yale.edu.

In accordance with federal and state law, the university maintains information on security policies and procedures and prepares an annual campus security and fire safety report containing three years' worth of campus crime statistics and security policy statements, fire safety information, and a description of where students, faculty, and staff should go to report crimes. The fire safety section of the annual report contains information on current fire safety practices and any fires that occurred within on-campus student housing facilities. Upon request to the Yale Police Department at 203.432.4400, the university will provide this information to any applicant for admission, or to prospective students and employees. The report is also posted on Yale's Public Safety website; please visit http://your.yale.edu/community/public-safety.

In accordance with federal law, the university prepares an annual report on participation rates, financial support, and other information regarding men's and women's intercollegiate athletic programs. Upon request to the Director of Athletics, PO Box 208216, New Haven CT 06520-8216, 203.432.1414, the university will provide its annual report to any student or prospective student. The Equity in Athletics Disclosure Act (EADA) report is also available online at http://ope.ed.gov/athletics.

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