“Find the questions that captivate you, and I promise that you will discover your path to a creative and fulfilling education. Each of the Thinking Matters courses here asks important and enduring questions and will show you how such questions are tackled at a university. I urge you to embrace these and other exciting opportunities in your freshman year to explore, to get inspired, and to create your own vision for the next four years and beyond.”

—Harry Elam,
Freeman-Thornton Vice Provost for Undergraduate Education
Olive H. Palmer Professor in the Humanities
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ANY QUESTIONS?

website: http://approaching.stanford.edu
email: approaching@stanford.edu
phone: (650) 723-7674

COURSE CATALOG AND ONLINE FORMS

• Read the descriptions of the Thinking Matters, ESF, ITALIC, SIMILE and SLE courses and programs.

• Rank your preferences for your Thinking Matters requirement by filing out Form 4 (and possibly Form 5), online at approaching.stanford.edu

• Make sure you have submitted this form, as well as the remainder of your reply forms, online, by 5:00 pm, Wednesday, June 5.

TO LEARN MORE

ABOUT THE PROGRAM

https://thinkingmatters.stanford.edu

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Campus photos courtesy of the Stanford News Service, Visual Arts Services, and the University Archives.
Building a Solid Foundation

You have embarked upon undergraduate study at Stanford, a research university where we give high priority to liberal education. Practically speaking, this means that you are expected to explore fully your potential academic interests and to develop the qualities of mind necessary for success in whatever specialized studies you might undertake. A liberal education enables you to make connections across many fields of study that will inform your future intellectual work and life after Stanford.

In the first year, therefore, we ask you to build your own solid foundation. One way is by taking at least one course each quarter especially designed for freshmen — such as Thinking Matters, Freshman Seminars and PWR1 — to accomplish these dual goals of exploration and development. You should craft a combination of required and elective courses into a freshman-year plan that reflects your individual needs and aspirations and also lays the groundwork for your future academic achievements.

Why Thinking Matters?

For more than 90 years Stanford has introduced incoming classes to the intellectual life of the university through required courses suited to their distinctive character and needs. Thinking Matters courses foreground significant and enduring questions and approach them from multiple perspectives. In high school, you spent a great deal of time providing answers to questions with a ‘right answer’ like those on the SAT exams. In Thinking Matters, our main goal is to help you develop the ability to ask rigorous and genuine questions that can lead to scientific experimentation or literary interpretation or social policy analysis. Thinking Matters will also help you discover, in lively lectures, seminars and tutorials, collaborative ways to approach solving problems and understanding issues.
Flexibility, Choice and Practice

Learning to make good academic planning decisions takes practice, lots of practice. Choosing among so many different options for fulfilling your Thinking Matters requirement is the first of what will certainly be many decision challenges about courses to take during your Stanford career. For most of you, a prescribed high school curriculum gave you little opportunity to develop these skills. We encourage you to use the Thinking Matters ranking process in Approaching Stanford to pay attention to how you make choices: Do you follow your gut reaction? Do you conduct background research and apply a rational approach? Do you develop your preferences in conversations with others or alone? In the end, through some combination of these strategies, you will find several Thinking Matters options that will arouse your curiosity and attract your interest. Obviously, there is no single right choice so we ask that you practice the art of self-questioning toward the goal of developing a reflective self-awareness. This will serve you well.

How to Use This Catalog

1. Each section of the catalog is organized by your Thinking Matters options: ILE, ESF or Autumn, Winter or Spring Thinking Matters courses.

2. Read through all of the descriptions and pay attention to the major questions asked by each program or course, the kinds of topics and materials that will be covered, and the kind of work you will be asked to do. Please refer to the Index to identify specific fields of interest and use the page provided at the beginning of each quarter to note your choices.

3. Challenge yourself! In narrowing your choices, ask yourself: “Am I drawn to studying what is already familiar or what is unknown to me?” “How will I be examining my assumptions about living my life and understanding the world?” “Why is this topic important to me?”

4. Share your proposed list of courses with others and ask for their thoughts.

5. Don’t worry. You will have the opportunity to request to change the initial choices you enter on form 4 to accommodate your schedule or your changing interests.
Among the decisions you must make before completing Form 4 is whether to select a stand-alone Thinking Matters course or a course—or set of courses—that integrates the Thinking Matters requirement with the Writing and Rhetoric Requirement and other WAYS requirements. This catalog provides descriptions for all the courses and programs that satisfy the Thinking Matters requirement, and you should use it to guide your ranking of six preferences per quarter that you will enter on Form 4 of Approaching Stanford at approaching.stanford.edu. Below are outlined three options for fulfilling your Thinking Matters requirement.

Option 1: Residential Integrated Learning Environments (ILEs)

By integrating the academic and residential experience, ILEs offer a comprehensive approach to liberal education across the entire year. One of the stated aims of residential education is to help students connect their curricular and residential lives, to create a culture in which ideas and inquiry are a part of the daily fabric of life. The residential ILEs can accommodate a total of approximately 180 students.

For over 30 years, Structured Liberal Education (SLE) has offered the experience of a small liberal arts college to about 100 freshmen each year who live in the residence where the classes meet. Faculty from across the university give SLE lectures in the dorm and often join students for dinner afterward. SLE integrates the study of humanities, classics, and writing instruction and satisfies both the Thinking Matters requirement and the Writing and Rhetoric Requirements (WR1 and WR2) and between three and four WAYS requirements. This comprehensive approach to liberal education is a three-quarter course sequence so you must rank it as #1 on the autumn and winter and spring course lists on Form 4 if you want to be considered for this option. Since it is residentially based, you must also rank the corresponding housing choice on Form 9.

Science in the Making Integrated Learning Environment (SIMILE) presents Stanford freshmen with a residential learning experience in which they set out to engage with the great thinkers and practitioners of science, medicine, and technology from antiquity to the present. Lectures and discussions take place in the dorm and are complemented by hands-on tutorials, field trips, and guest speakers as well as informal conversations among faculty and students. SIMILE satisfies the Thinking Matters requirement, WR1, and between two and four WAYS requirements. This comprehensive approach to liberal education is a three-quarter course sequence so you must rank it as #1 on the autumn and winter and spring course lists on Form 4 if you want to be considered for this option. Since it is residentially based, you must also rank the corresponding housing choice on Form 9.

Option 2: Education as Self-Fashioning

The Education as Self-Fashioning (ESF) program is offered only in autumn quarter and satisfies both the Thinking Matters and the PWR1 requirement. ESF is a set of linked seminars related to the general theme expressed in the course title. Six seminars, each with a different focus, meet separately as discussion classes led by the faculty; all ESF students also come together for a weekly lecture. Each seminar coordinates writing instruction with the course theme in specially designated writing sections. Each ESF seminar also satisfies at least one WAYS requirement. If you rank ESF among your choices in autumn quarter on Form 4, please be sure to rank-order the individual seminars on Form 5. ESF courses can accommodate a total of approximately 180 students.

Immersion in the Arts: Living in Culture (ITALIC) is a new residence-based program built around a series of big questions about the purposes of art and its unique capacities for intellectual creativity. It fosters close exchanges among faculty, students, and guest artists in class, over meals and during excursions to arts events. ITALIC satisfies the Thinking Matters requirement, WR1, and between two and four WAYS requirements. This comprehensive approach to liberal education is a three-quarter course sequence so you must rank it as #1 on the autumn and winter and spring course lists on Form 4 if you want to be considered for this option. Since it is residentially based, you must also rank the corresponding housing choice on Form 9.
Option 3: Individual Thinking Matters Courses

Thinking Matters courses are meant to develop your ability to ask questions and articulate problems in ways that are as unique as each of you. You will find yourself asking questions that you may never have thought to ask or in ways that you had never asked them before. The forms of inquiry and objects of study in Thinking Matters are diverse, from interpreting the work of James Baldwin to studying the politics of energy to assessing just war theory, but they are all concerned with the how as much as the what of knowledge.

Structure of Thinking Matters courses

1. **Lectures**, ranging from 40 to 120 students, are taught by Stanford faculty from a range of humanities, science, and social science fields as well as the Schools of Law, Engineering, Earth Sciences and Medicine. Students are given the opportunity to engage with professors, ask questions and be exposed to new subjects and new forms of inquiry.

2. **Discussion sections** of about 15 students are led by post-doctoral fellows who have been chosen in a highly competitive national search. Students learn to think through a problem collectively and debate ideas with other highly-motivated Stanford students.

3. **Tutorials** with post-doctoral fellows offer personalized attention to students individually and in small groups. This allows students to receive in-depth feedback on their assignments and projects as well as practice the habits of mind that lead to independent and original thinking.

Choosing your Thinking Matters Courses

A foundational principle of Thinking Matters courses is that there are multiple perspectives on any question, and we encourage you to take a similar approach in listing your course preferences. There are at least 7 Thinking Matters courses offered each quarter, and you will be required to take one to fulfill your freshman requirement, unless you enroll in ESF or in one of the ILEs (see above). On Form 4, we ask you to rank six courses per quarter. We will reserve one space for you in one of your top choices. More than 95% of students receive their first or second choices.

We also strongly encourage you to take more than one Thinking Matters course. Courses serve both as a means to satisfy the Thinking Matters requirement and as a way to fulfill the WAYS breadth requirements. On the Thinking Matters website, https://thinkingmatters.stanford.edu, you will be able to find out the specific WAYS requirement satisfied by each Thinking Matters course. Individual courses range from 40 to 120 students and the program can accommodate all freshmen.

**Steps to Take if You Choose:**

**OPTION 1:** Residential Integrated Learning Environments

1. On Form 4, rank one or more ILEs as 1, 2, or 3 in Autumn, Winter, and Spring.
2. On Form 9, rank the corresponding housing choice (Burbank or East Florence Moore) as 1.

**OPTION 2:** Education as Self-Fashioning

1. On Form 4, rank ESF as one of your top 6 choices in Autumn quarter.
2. On Form 5, rank individual ESF seminars.

**OPTION 3:** Thinking Matters Courses

1. On Form 4, rank your top 6 choices in Autumn, Winter, and Spring of individual Thinking Matters Courses.
Autumn, Winter, and Spring Quarter Residential Integrated Learning Environments

- Immersion in the Arts: Living in Culture (ITALIC)
- Science In the Making Integrated Learning Environment (SIMILE)
- Structured Liberal Education (SLE)
Immersion in the Arts: Living in Culture (ITALIC)

ITALIC is a new residence-based program built around a series of big questions about the historical, critical and practical purposes of art and its unique capacities for intellectual creativity, communication, and expression. This year-long program fosters close exchanges among faculty, students and guest artists and scholars in class, over meals and during excursions to arts events. We trace the challenges that works of art have presented to categories of knowledge – history, politics, culture, science, medicine, law – by turning reality upside-down or inside-out, or just by altering one’s perspective on the world. The arts become a model for engaging with problem-solving: uncertainty and ambiguity confront art makers and viewers all the time; artworks are experiments that work by different sets of rules. Students will begin to understand and use the arts to create new frameworks for exploring our (and others’) experience.

What ITALIC is not

ITALIC is not meant to be a dorm filled with future artists and art historians. We hope to have a mix of students who plan to work in the sciences, or engineering, or the humanities, as well as studio art or art history. No previous art experience is necessary. For students who already enjoy working with visual media, sound and music, film and theater, digital art and comics, ITALIC provides a supportive environment for continued work. ITALIC is about learning the ways art that already exists in your lives, and about learning how to approach different fields with a greater sense of exploration, experimentation, and creativity.

Residence-Based Learning

All lectures, sections, arts workshops and guest talks and student “arts lab” work will happen in a cluster of on-site seminar and practice rooms dedicated to ITALIC. Through a series of close readings and analyses of canonical works of theater, film, dance, music, and visual arts as well as graphic novels, comics, magic shows and popular culture, freshmen will live and learn together in Burbank Hall. ITALIC will share some living and working spaces with another ILE program, SIMILE, which is organized around the history of science. (See below.) Some collaborative events and projects between the two programs will encourage an interchange between science and art.

A Year-Long Exploration of the Arts and Their Place in Our World

At the center of the ITALIC experience will be a three-quarter course sequence.

Autumn Quarter: “Why Art?”

What does our brain do when it engages with a painting or a song? How does a movie create its sense of immersive excitement? How do artists work with different materials, and how is their work appropriated by artists working in different traditions?

Selected Course Material and Artists

John Cage, Silence; Leo Tolstoy, “What is Art?”; Jonathan Berger, The Rhythmic Brain; John Dewey, Art as Experience; Rudolph Arnheim, Art and Visual Perception; Roger Copeland, Merce Cunningham; Hair (musical)

Winter Quarter: “Gravity and Levity.”

How does art engage with issues in the world in ways both weighty and playful? How do we make sense of the ways that the horrors of war give us, for example, Picasso’s massive “Guernica” painting, but also the Marx Brothers in the anarchic comedy Duck Soup?

Selected Course Material and Artists

Friedrich Nietzsche, The Gay Science or Thus Spoke Zarathustra; Grant Morrison, All-Star Superman; Jennifer Homans, Apollo’s Angels; George Balanchine; Oscar Wilde; Pina Bausch; Lysistrata; War Requiem; Hector Berlioz; Marx Brothers, Duck Soup; Maurice Merleau-Ponty, The World Of Perception; Susan Sontag, “Against Interpretation”; George Herriman, Krazy Kat
ITALIC OVERVIEW

Residence:
Burbank (all-frosh—shared with SIMILE students)

Size: 45 students

Weekly Structure:
• Two hours of lecture (Tuesday and Thursday)
• Two hours of small-group discussions (varies)
• Two 110 minute writing section (one quarter)

Units: 16
• 4 in two quarters; 8 in the quarter with intensive writing instruction

Requirements fulfilled:
• Thinking Matters
• WR1
• 2-4 WAYS

Foundation for Undergraduate Education:
ITALIC develops critical reading, writing, and speaking skills that prepare students for excellence in their subsequent studies. Students receive individualized writing instruction all year long from specialized ITALIC instructors. In seminars, students learn effective ways of contributing to discussions and of disagreeing with fellow discussants in a respectful and productive way. We want to create an environment that fosters intellectual energy and high levels of achievement. We hope our students will bring this energy to their later classes and will continue their achievements by pursuing honors and research grant funding at Stanford.

Jonathan Berger (Music)
Jonathan Berger is the Denning Family Provostial Professor in Music. His work (at Stanford’s Center for Computer Research in Music and Acoustics) elides music composition and research on the perception and cognition of music.

Scott Bukatman (Art and Art History)
Professor Bukatman teaches in the Film and Media Studies Program, and his research highlights the ways in which popular media (film, comics) and genres (science fiction, musicals, superhero narratives) mediate between new technologies and human perceptual and bodily experience. His latest book is The Poetics of Slumberland: Animated Spirits and the Animating Spirit, and it makes a great gift.

Janice Ross (Theater and Performance Studies)
Professor Ross works in Dance Studies, with a particular interest in the social and cultural importance of dance historically and in the contemporary moment. Her research interests include Dance in Prison and Ballet in Soviet Russia, subjects that have more in common than one might think.

Spring Quarter:
“Why NOT Art?”
When is art perceived as a danger to society, how has it been regulated? How do we make sense of art when it crosses the boundary into things that are not traditionally considered art? What is relationship between art and science or art and design or popular culture? We will ask why maintaining this boundary is so important and whether it is important to Stanford University itself.

Selected Course Material and Artists
The Degenerate Art Show of WWII; iPhone aesthetics; Smule’s interactive sonic applications for the iPhone; Li’l Buck’s Jookin’ dance; Turf Feinz hip hop dance; Shakespeare.

A World of Art, and the Arts on Campus
ITALIC students will experience the performing arts in San Francisco and on campus. The program will provide tickets to ballets, operas, concerts, as well as to museums and gallery visits. Artists will be invited to Stanford, not only to perform, but to meet and dine with the students of ITALIC. Collaborations with the Cantor Art Museum and the Bing Concert Hall will be part of the experience, as will work with the McMurtry Building, the future home of art history and film studies at Stanford. ITALIC students will also have a voice in the kinds of activities they’d like to see represented.
Science In the Making Integrated Learning Environment (SIMILE)

SIMILE is a new residentially-based program organized around the question of when something we might call “science” identifiably began, what it became, and what it might become. While we may believe that most science, technology and medicine represent some of the powerful tools we have for making a difference in the world, SIMILE challenges students to consider these as dynamic and changing fields of knowledge which must be understood in their historical, cultural and social contexts. Only then can we consider how new ideas, interpretations, technological artifacts and systems respond to societal needs within the limits of what is possible but also, importantly, in light of what might become plausible.

Intellectual Community

Science In the Making presents freshman with a one-of-a-kind residential learning experience in which they set out on an intellectually intense journey and grapple with the great thinkers and practitioners of science, medicine, and technology from antiquity to the present. A historical perspective will de-familiarize what students think they know. It will invite them into the distant past and surprise them with the sophistication of its science, medicine, and technology. Students will be able to trace how the answers to crucial problems unfold over a long period of time and change.

Each week offers students the opportunity to examine a rich and well-chosen case study mapped in time and space. We see how past societies identified important scientific and technical problems and developed the means to provide explanations and solutions. For instance, the question of how to map the heavens also begs the question of why. What does a society do with this knowledge? How do they accumulate, interpret, and transmit it? What do other societies do with this knowledge as it travels?

Autumn Quarter:
“What was science, technology, and medicine?”

Selected Course Material
Selections from Nine Chapters; Plato, Timaeus; Euclid, Elements; Archimedes, Planes in Equilibrium, Floating Bodies; Galen, Hippocratic Corpus; Pliny, Natural History; Nappi, The Monkey and the Inkpot; Leonardo, Notebooks; Columbus, Four Voyages

Winter Quarter:
“What did science, technology, and medicine become?”

Selected Course Material
Copernicus, On the Revolution of the Heavenly Spheres; Ambroise Paré, On Monsters and Marvels; Galileo, Dialogues Concerning Two Chief World Systems; Bacon, Novum Organum; Descartes, Meditations; Hooke, Micrographia; Newton, Principia; Voltaire, Letters on the English; Franklin, Letters to Peter Collinson on Electricity

Spring Quarter:
“What is science, technology, and medicine in a global age?”

Selected Course Material
Darwin, The Descent of Man, and Selection in Relation to Sex; Lombroso, Criminal Man; Napoleonic Egyptian Scientific Expedition, Description de l’Egypte; Rosenheim, The Cryptographic Imagination; Freud, Civilization and its Discontents; Einstein, Ideas and Opinions; Tesla, My Inventions; Black, IBM and the Holocaust; Oreskes and Conway, Merchants of Doubt

Learning by Thinking and Doing

All SIMILE lectures and discussions take place in the dorm, and are complemented by hands-on tutorials, field trips, and lectures by invited experts, as well as informal and ongoing conversations among faculty and students in the residence.

SIMILE also provides hands-on opportunities to gain perspective on the material culture of science and technology. Understanding ancient scientific instruments, historical experiments, and the ingredients that gave birth to more modern technologies will give students a real appreciation of how knowledge is made by doing as well as thinking. We will consider these issues by talking with distinguished visitors who investigate these subjects from many different disciplines in our “Science Salon” and by working in small groups on historical projects in our “Collaboratorium.” There will also be quarterly opportunities to collaborate with ITALIC, the freshman residential program in the arts also housed in Burbank, doing creative projects of science, technology, and art together.
Foundation for Undergraduate Education

Students will emerge from the yearlong experience in SIMILE understanding science, medicine, and technology in their original contexts, as works entwined with the philosophies, religions, literatures, crimes, and arts of the worlds in which they are created. Students will have grappled with a set of profound questions as relevant today as in antiquity: How do scientific worldviews explain body, nature, and cosmos? What compels human societies to push beyond the frontiers of knowledge of any given time? Why do we accept some new ideas quickly, while others inspire our reaction and opposition? Above all, why has science been so successful—what, in the final analysis, makes it possible for us to discover truth and to transform the world around us?

When our SIMILE freshmen continue their education at Stanford as sophomores, they carry with them subtle and sophisticated insights about the intersections of science and literature, technology and art, medicine and history, knowledge and faith, in a multiplicity of scientific cultures across the world. And they are ready to change it.

Is SIMILE the right choice?

SIMILE is designed to appeal to several different kinds of students who might not otherwise find themselves in the same conversation. It is designed for the potential scientist, engineer or physician interested in understanding these fields historically; it is equally designed for the humanities or social science student who wants to understand science, technology, and medicine as social, cultural, and historical phenomena. Last but not least, it is designed for students who are fascinated with both the humanities and sciences and who do not wish to choose between them. In all instances, this is a program designed for students looking for a challenging and cohesive intellectual program as the bedrock of their freshmen experience.

Paula Findlen (History)

Professor Findlen probably became a historian of Renaissance science when she developed an uncommon passion for Leonardo, and realized that this was a perfect way to combine her interest in science, art, history, and Italian. She has written on the origins of science museums, the emergence of natural history, women in science, and the controversies about science and religion surrounding the trial of Galileo.

Tom Mullaney (History)

Professor Mullaney ventured unknowingly into a beginning Chinese language class as a freshman at Johns Hopkins and never left. He works on a variety of 19th and 20th century topics, including the history of modern Chinese science, the history of ethnic minorities in China, and the history of Chinese-language information technology.

Reviel Netz (Classics)

While studying Ancient History for his BA in Tel Aviv University, Professor Netz came to be passionately gripped by doubt: how do we know all of this? Instead of seeking treatment, Reviel became a historian of science. Along the way he became the editor of the works of Archimedes (the greatest scientist of antiquity) and wrote books that range from Hebrew poetry to animal rights.

Robert Proctor (History)

Professor Proctor was born in Texas, the grandson of a Klansman. Later improvements came from a diet of John Dewey’s liberalism and Veblenian heterodox economics. History of Science is a love he found while searching for a way to study a little bit of everything; specialties include human origins, agate aesthetics, Nazi medicine, and the history of ignorance. He’s also written on tobacco, cancer, and the mysteries of how to interpret the oldest human tools.

Jessica Riskin (History)

Professor Riskin wanted to major in at least three different things in college, including history, physics, and philosophy, but discovered that a lot of the courses she wanted to take actually added up to a major called “history of science.” Professor Riskin is finishing a book about the history of mechanical explanations of living creatures: attempts to understand animals and human beings as mechanisms like clocks or automatic organs or electronic computers.

### SIMILE OVERVIEW

<table>
<thead>
<tr>
<th>Residence:</th>
<th>Burbank (all-frosh—shared with ITALIC students)</th>
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<tbody>
<tr>
<td>Students:</td>
<td>45</td>
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<tr>
<td>Weekly Structure:</td>
<td>Two 75-minute lectures (Tuesday and Thursday)</td>
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<td></td>
<td>Two hours of small-group discussions (varies)</td>
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<td>Science Salon on Thursday</td>
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<td>Requirements fulfilled:</td>
<td>Thinking Matters</td>
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<td>WR1</td>
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<td>2-4 WAYS</td>
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Structured Liberal Education (SLE)

Structured Liberal Education (SLE) is a challenging and supportive year-long program that offers entering students a coherent path through the freshman experience. The small student population, the residential setting, and the renown of the faculty have, for 40 years, combined to make SLE the college experience within the university.

Residence-based Learning
SLE freshmen live and learn together in the three houses (one freshman and two 4-class) within East Florence Moore Hall, where they are mixed with about an equal number of non-SLE freshmen and upperclass students. All the SLE lectures, small-group discussions, salons, films, and plays take place in the residence's lounges and classrooms. The physical concentration of SLE activities fosters close relationships among students as well as between students and instructors. Freshmen in SLE develop friendships that sustain them throughout their college years as well as an attachment to the SLE program that keeps them coming back as sophomores, juniors, and seniors to serve as writing tutors and mentors.

Intellectual Community
SLE draws students into a life of ideas in an atmosphere that emphasizes critical thinking and interpretation. SLE's year-long chronological structure, extending from the ancient world to the present, offers students a broad and deep engagement with the ideas that have shaped our world. Shared readings promote vigorous exchange in the classroom setting, in the dining room at mealtime, and in the dorm late at night. Each week culminates either with a salon, in which a faculty member discusses with SLE students the resonances in our world of issues they have encountered in their readings or with a film chosen as a commentary on the written texts studied in lectures and discussion sections.

Distinguished visitors to campus often come to SLE for tea or pizza lunch with students. Recent visitors have been the President of Ireland Mary Robinson, Senator Russ Feingold, and writers Tim O'Brien, Sebastian Junger, and George Packer. Special events take SLE to San Francisco for the Opera, museums, and theater. In addition, each quarter students organize and produce a play, which not only concludes the term with great fun for everyone but also offers an additional vantage point for viewing the period under study.

Preparation for the undergraduate career
More intensively than any other program for entering students, SLE develops critical reading, writing, and speaking skills that prepare students for excellence in their subsequent studies. Students receive individualized writing instruction all year long from SLE instructors and upper-class writing tutors. In seminars, students learn effective ways of contributing to discussions and of disagreeing with fellow discussants in a respectful and productive way. As a consequence, SLE students are remarkable for the intellectual energy they take to their later classes and are regularly over-represented among undergraduates winning academic honors and research grant funding at Stanford.

The SLE workload is approximately equal to two Stanford courses each quarter, so it constitutes a significant portion of a student's academic load (students enroll in SLE for the entire year). Students take two to three additional courses each quarter, so they have no difficulty combining this coherent program of liberal education and skills development with courses in any sector of the university. SLE students go on to major in all the academic disciplines, from engineering to social sciences to humanities, so some are doing SLE with calculus and chemistry while others are doing SLE with introductory economics, foreign language, and history.

SLE OVERVIEW
Residence:
East Florence Moore
Students: 96

Weekly Structure:
• 3 hours of lecture (Tuesday and Wednesday, late afternoon)
• 4 hours of small-group discussion (Wednesday and Thursday, late afternoon)
• Weekly film series and salons (Thursday)

Units: 24
• 8 each quarter
• Requirements fulfilled:
  • Thinking Matters
  • WR1 and WR2
  • 3-4 WAYS
Students envisioning a science or engineering major will gain in SLE a broad and coherent view of literature, philosophy, and the arts that they otherwise would be required, by the university’s graduation requirements, to pick up in unrelated courses that can leave large gaps in their understanding. Students envisioning a major in humanities or social sciences will gain an incomparable foundation for more advanced study. Because the thrice-weekly lectures are given by faculty members drawn from the various humanities and social science departments, students end the year having become acquainted with some 70 professors, which is an invaluable aid to selecting follow-up classes and even to choosing one’s major.

Because SLE stretches across three quarters and involves the workload of a double-course each quarter, it satisfies numerous requirements that all Stanford students must satisfy in order to graduate. As a consequence, students who enroll in SLE not only receive optimal instruction in classic works of philosophy and literature but also gain greater choice and flexibility in the sophomore, junior, and senior years because they have satisfied so many of the university’s requirements in the first year.

**Is SLE right for you?**

Check out the video testimonials by SLE students, recent syllabi and booklists, and pictures of SLE events on the program’s website (http://sle.stanford.edu).

**Carolyn Lougee-Chappell (History)**

Carolyn Lougee Chappell is a Professor of Early Modern European History and the Director of Structured Liberal Education. She specializes in the history of 16th and 17th century France and currently studies the cultural patterns and migrations of peoples that predated the rise of nationalism and that have persisted as cosmopolitan, border-crossing connections in the modern Europe of nation states.

**Representative Readings and Authors**

*(not a complete listing)*

**Autumn:**
- Homer
- Plato
- Aristotle
- Greek tragedy
- Hebrew Bible
- Zhuangzi
- Mengzi
- Virgil
- New Testament

**Winter:**
- Augustine
- Aquinas
- Dante
- Machiavelli
- *Don Quixote*
- Descartes
- Equiano
- Diderot
- Rousseau

**Spring:**
- Flaubert
- Marx
- Nietzsche
- Freud
- Conrad
- Eliot
- Woolf
- Kafka
- Brecht
- Beauvoir
- Sartre

Next page: Rafael, *The School of Athens*, 1509-1511 rr.
Autumn Quarter: Education as Self-Fashioning

The Active, Inquiring, Beautiful Life
The German Tradition of Bildung or How to Become a Global Citizen
How to be a Public Intellectual
Learning to Change
Thinking Like a Philosopher
The Wind of Freedom
“Let [the student] be asked for an account not merely of the words of his lesson, but of its sense and substance, and judge the profit he has made by the testimony not of his memory, but of his life.”
— Montaigne

What is the meaning and purpose of a liberal education?

Education as Self-Fashioning is a unique opportunity offered only in the Autumn quarter, since its aim is to introduce entering students to a liberal education. The courses provide you with an opportunity to work closely with a faculty member in a seminar-style setting while simultaneously completing your first-year writing requirement. Each seminar also counts for one or more WAYS requirements. In Education as Self-Fashioning, we consider writings about education by intellectuals working in various fields, with the aim of articulating different ways that education can be used to structure one’s thinking, one’s self, and ultimately one’s life as a whole. You will grapple with this issue in dialogue with fellow students and faculty from across a wide range of disciplines — from the humanities and social sciences through the natural sciences and mathematics.

The three components of ESF are described below. ESF counts as a 7-unit course.

1. A seminar with a faculty member that meets once per week for at least 75 minutes. Participating students will enroll in one of these, taught by a faculty member from the featured discipline (or disciplines, in the case of team taught seminars).

2. A section with a writing instructor that meets for sessions of 110 minutes twice per week.

The discipline of writing plays a central role in the process of fashioning yourself as you liberally educate yourself. Writing is a means of understanding what you have read, of thinking for yourself, and of developing a coherent set of aspirations and values. All ESF courses are writing intensive for these reasons.

3. A lecture series that will meet once-a-week featuring prominent intellectuals. ESF will sponsor a lecture series featuring prominent intellectuals (from Stanford or elsewhere) lecturing on the nature and meaning of liberal education. These lectures are required for students enrolled in ESF, but they will also be open to the public. The lectures will constitute an ongoing, campus-wide conversation about the aims of liberal education.
ESF: The Active, Inquiring, Beautiful Life

Moving through history from the Rome of the Emperor Hadrian, to the city-states of Renaissance Italy, to the 18th century republic of the United States, we will examine how self-made men fashioned themselves and their surroundings by educating themselves broadly. We will ask how a liberal education made their active careers richer and more transformational. We will also take up the great debate on whether a liberal education or vocational training is the surest path to advancement. We will engage this debate through the works of W.E.B. Du Bois and Booker T. Washington but consider today’s struggle over the same issues — a struggle that engrosses both highly industrialized and developing societies.

SELECTED COURSE MATERIAL

Selected texts from:
Marcus Aurelius
Baldesar Castiglione
Thomas Jefferson
John Stuart Mill
Cardinal John Henry Newman
W.E.B. Du Bois

Blair Hoxby (English)
Professor Blair Hoxby studies the literature and arts of the Renaissance and the Enlightenment, with a special interest in the persistent influence of classical civilization.

Caroline Hoxby (Economics)
Professor Caroline Hoxby evaluates the effects of educational policies and analyzes the economic principles underlying our primary, secondary, and university school systems.

ESF: The German Tradition of Bildung or How to Become a Global Citizen

This course considers education not as training in external knowledge or skills but as a lifelong process of development and growth in which an individual cultivates her or his spiritual, cultural, and social sensibilities. This concept of education—education as a formative and transformative process in the development of the self—is called Bildung in German and has a long tradition reaching back to the Middle Ages. The concept of Bildung takes on a secular meaning in the Reformation, when Ulrich von Hutten first coined the phrase that has become Stanford’s motto: “Die Luft der Freiheit weht” (The wind of freedom is blowing,”). What he meant is that the cultivation of oneself leads to the freedom of thought, freedom to act, freedom to assert oneself as an individual, freedom to access knowledge, and freedom to determine one’s own role in society.

In this course we will read reflections on education as self-fashioning by some of the greatest German thinkers spanning from the Middle Ages to the present. We will also enjoy some contemporary parodies of such reflections. These readings and our discussions will help us to understand Stanford undergraduate education as a transformative process of self-realization in our global society.

SELECTED COURSE MATERIAL

Selected texts from:
Meister Eckhart
Ulrich von Hutten
Martin Luther
Immanuel Kant
Johann Wolfgang von Goethe
Wilhelm von Humboldt
Johann Gottfried von Herder
E.T.A. Hoffmann
Franz Kafka

Kathryn Starkey (German)
Kathryn Starkey is a Professor of German. She grew up in Canada, studied at Queen’s University, Kingston, and taught for a year in Germany before moving to the States to complete her Ph.D. Her research and teaching interests include medieval literature, material and visual culture, gender and sexuality, and narrative theory. She has published two books on medieval manuscript illustration and articles on a wide variety of topics ranging from medieval shoes to psychoanalytic theory.
ESF: How to be a Public Intellectual

Can education impart more than bookish learning? This is the question that critics have posed since the European Renaissance. Through their reflections, these critics posited an alternative ideal of education that prepared the student for life outside the academy. Over the centuries, this ideal would evolve into what we would today call an “intellectual” — but this modern concept only captures a part of what earlier writers thought learning could achieve. In this course, we will focus on how education can prepare students to engage in public debates and the role that the university can play in public learning.

SELECTED COURSE MATERIAL

Selected texts from:
- Michel de Montaigne
- René Descartes
- W.E.B. Du Bois
- Ralph Waldo Emerson
- Allen Bloom

Dan Edelstein (French and Italian)
Professor Edelstein works on 18th-century intellectual networks and revolutions.

ESF: Learning to Change

Does education entail changing the self? How much? Why should I change my life? How do I discover that I need to change? Who can rightly tell me how to change? What difference does it make? These and related questions have been around for a long time, yet that makes them no easier to answer today than 2500 years ago. In the 5th century BCE, Socrates found that his answers—based on his own will to change—proved troublesome, and ultimately fatal. His follower, the philosopher Plato, transformed the Socratic exploration into idiosyncratic utopian visions that sought to change the conditions of life—and so make Socrates’ fate unrepeatable. Plato’s own followers, from Aristotle onward, found new ways to explain, enact, or evade change. Not until the end of antiquity, however, do we find, in Augustine of Hippo (354-430 CE), someone as explicitly and passionately committed to personal change as the early Greek thinker. Bookended by the major figures of the Athenian seeker and the North African, this course will lead students to analyze and compare their own tentative answers with the ideas on self-fashioning that can be found in a range of ancient texts. Students will demonstrate their grasp of the material through a variety of exercises, including a research paper, discourse analyses, and responses in persona.

SELECTED COURSE MATERIAL

Dialogues of Plato (Apology, Crito, Symposium, Phaedo, excerpts from Republic)
- Confessions of Augustine
- Selections from Aristophanes, Aristotle, Thucydides, Cicero, Seneca and Ovid
- Selected background readings on Athens and early Christianity.

Richard Martin (Classics)
Professor Martin’s research in classics centers on the poetry of Homer, considered as a traditional oral performance art. In search of enlightening comparative art forms, he has done field work in Irish-speaking areas of modern Ireland to complement his study of medieval Irish epics and bardic poetry.


ESF: Thinking Like a Philosopher

The Ancient Greek aphorism “Know thyself” is a centerpiece of wisdom. But knowing one’s own mind is not easy, in part because it is not a matter of simply looking inward to find one’s proclivities and beliefs; it seems one must look outward to the issues and questions the world presents, and know what one thinks about them. Knowing oneself is in part a matter of knowing one’s way around as a thinker, where that is a matter of knowing how to think about issues, when to trust one’s judgment and when to withhold it. Fashioning or making oneself into a better (more acute, more sensitive, more judicious) reasoner is something philosophy as a discipline holds out as a promise. In this course, we will take up the first task of becoming better reasoners about a select handful of persistent problems; we will at the same time reflect on what it is that philosophical thinking is, and how it might shape us as thinkers.

SELECTED COURSE MATERIAL

- Plato, *The Euthyphro*
- Edmund Gettier, “Is Justified True Belief Knowledge?”
- Judith Jarvis Thomson, *Killing, Letting Die and the Trolley Problem*
- William Clifford, “The Ethics of Belief”
- William James, “The Will to Believe”
- David Hume, *On Induction*
- Schopenhauer, *On the Freedom of the Will*
- *Descartes, Meditations* (selections)

Krista Lawlor (Philosophy)

Professor Lawlor works in both philosophy of mind and epistemology, recently focusing on the epistemic aspects of assurance giving.

ESF: The Wind of Freedom

Stanford’s unofficial motto, “the wind of freedom blows,” engraved in German on the university seal, invites us to ponder freedom in the context of education. What is the relation between freedom and the “liberal” arts? Does studying free your mind? Does free will even exist? If so, how does education help you develop its potential? This course will look at various authors—from antiquity through the 20th century—who have thought about the blessings, burdens, and obligations of human freedom. Beginning with Eve in the Garden of Eden, we will explore how exercising freedom in your personal choices and conduct not only determines your fate as an individual but carries with it a measure of responsibility for the world. We will place special emphasis on the implications of such responsibility in our own time.

SELECTED COURSE MATERIAL

- Cardinal John Henry Newman, Preface to *The Idea of a University*
- *Genesis*, “The Fall”
- Sophocles, *Antigone*
- Plato, *The Apology*
- Pico della Mirandola, *Oration on the Dignity of Man*
- Kant, “What is Enlightenment?”
- Emerson, “Self-Reliance” and “The American Scholar”
- Fuller, *Woman in the Nineteenth Century* (excerpts)
- Jean-Paul Sartre, *Being and Nothingness* (excerpts); “Existentialism is a Humanism”
- Simone de Beauvoir, excerpt from *The Second Sex*

Robert Harrison (French and Italian)

Professor Harrison has written four books on a diverse array of topics, ranging from Italian lyric poetry to man and his relationship with the environment and is the host of weekly radio talk show, Entitled Opinions (about Life and Literature), which airs on Stanford’s radio station KZSU FM 90.1
How do you capture “thinking”? In 1902, Auguste Rodin showed it through his iconic bronze sculpture of a seated nude male figure deep in meditation. The Thinker can be found at the Cantor Art Center at Stanford to greet the class of 2017.
Autumn Quarter *Thinking Matters* Courses

- Breaking Codes, Finding Patterns
- Can the People Rule?
- Energy: Understanding the Challenges, Developing Solutions
- Journeys
- The Science of *MythBusters*
- Sustainability and Collapse
- Technological Visions of Utopia
Breaking Codes, Finding Patterns

Why are humans drawn to making and breaking codes? To what extent is finding patterns both an art and a science?

Cryptography has been used for millennia for secure communications, and its counterpart, cryptanalysis, or code breaking, has been around for just slightly less time. In this course we will explore the history of cryptography and cryptanalysis including the Enigma code, Navajo windtalkers, early computer science and the invention of modern Bayesian inference. We will try our own hand at breaking codes using some basic statistical tools for which no prior experience is necessary. Finally, we will consider the topic of patterns more generally, raising such questions as why we impute meaning to patterns, such as Biblical codes, and why we assume a complexity within a pattern when it’s not there, such as the coincidence of birthdays in a group.

Susan Holmes (Statistics)
Professor Holmes’ main areas of interest are computer-intensive methods in data mining and multivariate statistics, especially simulation methods such as the bootstrap.
Can the People Rule?

How did our ideas about democracy as a universal norm evolve from a term once used to describe a handful of ancient Greek city-states? Would American democracy function better if we applied ancient practices that allowed the people to rule more directly and knowledgeably?

In this course, we will explore the idea of democracy through the experience of the American republic, focusing on the constitutional experiments of the Revolutionary era and the 19th-century democracy analyzed by Alexis de Tocqueville. We then address contemporary criticisms voiced against many democracies today: that the public is not well informed and therefore incapable of governing. You will read and learn to draw on major works of political theory to think critically about the complexities of American democracy. You will also be asked to participate in a two-week experiment in Deliberative Polling, which involves gathering citizens in random groups to study and discuss issues. Through this exercise, you will explore whether this structure might offer an attractive or complementary alternative to representative rule.

“It has been frequently remarked that it seems to have been reserved to the people of this country, by their conduct and example, to decide the important question, whether societies of men are really capable or not of establishing good government from reflection and choice, or whether they are forever destined to depend for their political constitutions on accident and force.”
— Alexander Hamilton, The Federalist

Jack Rakove (History and Political Science)
Professor Rakove is the author of the Pulitzer Prize-winning book, Original Meanings: Politics and Ideas in the Making of the American Constitution.

James Fishkin (Communication)
Professor Fishkin is the author of When the People Speak: Deliberative Democracy and Public Consultation; he also conducts Deliberative Polling around the world.

SELECTED COURSE MATERIAL
Alexander Hamilton, John Jay, and James Madison, The Federalist
Alexis de Tocqueville, Democracy in America
Robert Dahl, How Democratic Is the American Constitution?
James Fishkin, The Voice of the People
Magic Town (film)
PBS special on Deliberative Polling
Energy is the lifeblood of human societies. Energy use is intricately woven through the fabric of the productive (and comfortable) lives we live in the developed world. We use energy to move and sometimes make fresh water, grow food, transport it to markets, heat, cool, and light our dwellings and workplaces, communicate and compute, and travel the world. We worry about energy security and fret about the cost of gasoline. In this course, we will explore how to address the challenge of supplying the world’s energy in the face of growing population and the needs of the developing world. Energy is also a primary way human activities interact with global air, water, and biological systems that provide essential services to us and the planet. We will therefore consider how to change the world’s energy systems in the decades to come in order to ensure that we balance our interactions with those systems.

How much energy do we need to run the world and what energy resources can we use? How do we convert those resources into energy services? What are the economic, environmental, and security costs of energy services? How will energy markets address the challenges of reducing greenhouse gas emission?

SELECTED COURSE MATERIAL


Burton Richter, *Beyond Smoke and Mirrors: Climate Change and Energy in the 21st Century*

David J.C MacKay, *Sustainable Energy – Without the Hot Air*

Lynn Orr  
(Energy Resources Engineering)  
Professor Orr is the director of the Precourt Institute for Energy. His research focuses on how fluids like oil, water, and gas flow in the rocks of the Earth’s crust.

Chris Edwards  
(Mechanical Engineering)  
Professor Edwards’ research group does fundamental research for advanced energy technologies including advanced transportation engines (piston and turbine) and advanced electric power generation with carbon mitigation.

Jim Sweeney  
(Management Science and Engineering)  
Professor Sweeney is the director of the Precourt Energy Efficiency Center. His research examines energy efficiency technologies, policies, and behavior, energy and climate change policy, electricity markets, and implementation of California’s AB32.
Journeys

Is death final or only the beginning of another journey? How do the mysteries of destination give rise to our most basic questions of purpose, meaning, and faith, and challenge us to consider our proper relation to others?

Journeys will examine works written across a span of some 2,300 years, from Chinese philosophy to American short stories. Each of these forms and genres presents some essential aspect of the journey we all share, and of the various passages we make within that one great journey that relentlessly challenge and transform us even as we advance toward what the poet Thomas Gray called our “inevitable hour.” By reading, discussing, and interpreting these works, we will ask you to consider how each text compels us, by the penetration of its vision and the power of its art, to make part of our own journey in its company.

Tobias Wolff (English)
Professor Wolff is the author of the memoir This Boy’s Life and several other books of fiction and nonfiction.

Lee Yearley (Religious Studies)
Professor Yearley has written, among other works, a comparison between major Confucian and Christian thinkers that has recently been translated into Chinese. He is the Walter Y. Evans-Wentz Professor and has received the Bing Teaching Award for Excellence in Undergraduate Education.

SELECTED COURSE MATERIAL

James Baldwin,  
The Fire Next Time
Albert Camus, The Stranger
Flannery O’Connor, selected stories
Isak Dinesen, selected stories
Leo Tolstoy, selected stories
Writings of Chuang Tzu, with selected poems from the T’ang Dynasty
As its point of departure, this course will examine and critique selected episodes of the television series, *MythBusters* (Discovery Channel), which tests the validity of many popular beliefs, including myths, rumors, traditions, and stories, in a variety of imaginative ways. We will take the opportunity to delve more deeply into the applicability of the scientific method in understanding a vast range of real-world problems, and into the practical acquisition of fact-based knowledge, which together form the cornerstone of all science. The intellectual framework of this course will be based, first and foremost, on skeptical inquiry, combined with the other key ingredients of good science, which include: careful experimental design, meticulous observation and measurement, quantitative analysis and modeling, the evaluation of statistical significance, recovery from failure, and the continuous cycle of hypothesis and testing. The final project will involve writing a formal scientific grant proposal. We hope to inculcate in our students “a taste for questioning, a sense of observation, intellectual rigor, practice with reasoning, modesty in the face of facts, the ability to distinguish between true and false, and an attachment to logical and precise language.” (Yves Quére, 2010 Science 330:605).

The faculty are distinguished by their exceptionally broad scientific backgrounds and diverse research interests: all three are associated with Bio-X, and collectively they hold appointments in Stanford departments and programs covering physics, biology, chemistry, biomedicine, and computer science.

**Steven M. Block (Applied Physics and Biology)**
Professor Block, the S.W. Ascherman Chair of Sciences, is a biophysicist with a passion for all science and a background in both physics and molecular biology; his lab group conducts research on single proteins and nucleic acids using advanced optical methods.

**Vijay Pande (Chemistry and, by courtesy, Computer Science and Structural Biology)**
Professor Pande is the chair of the Biophysics Program, in addition to being the Director of the Folding@Home distributed computing project. His background is in physics and his research involves using computers and modeling to tackle challenging problems in chemical biology, biophysics, and biomedicine.

**Jan Skotheim (Biology and, by courtesy, Chemical and Systems Biology)**
Professor Skotheim is a cell and systems biologist who was originally trained as an applied mathematician. His research focuses on a variety of problems associated with the diversity of natural forms, including the principles of genetic control of the cell division cycle and size control in individual cells.
What does it mean to live sustainably? How do our different definitions of nature - scientific, literary, cultural, and historical - shape the way we answer that question?

Sustainability and Collapse will explore what people in different places and periods of time have envisioned as successful ways of living with nature and how such ways of life have come under pressure. We will focus particularly on the interface between scientific and humanistic approaches to questions of environmental sustainability through a study of novels, historical texts, and works of biogeography. You will learn to ask how textual and visual images inform our ideas about what it means to live sustainably. We will then consider whether those ideas are in accordance with or in conflict with scientific understandings of human uses of nature. This course takes on some of the fundamental problems that presently confront our global community.

“Like winds and sunsets, wild things were taken for granted until progress began to do away with them. Now we face the question whether a still higher ‘standard of living’ is worth its cost in things natural, wild, and free. For us of the minority, the opportunity to see geese is more important than television, and the chance to find a pasque-flower is a right as inalienable as free speech.”

Aldo Leopold, from A Sand County Almanac

Russell Berman (German and Comparative Literature)

Professor Berman studies literature as part of cultural differences, especially between Europe and the United States, including different understandings of the environment and environmentalist politics.

Mark Zoback (Geophysics)

Professor Zoback does research on earthquakes and active faulting, optimizing recovery of natural resources, and minimizing the environmental impact of resource development.

SELECTED COURSE MATERIAL

John Steinbeck,
The Grapes of Wrath

Thomas Malthus,
Essay on the Principle of Population

Aldo Leopold,
A Sand County Almanac

Amitav Ghosh, The Hungry Tide

Marc Reisner, Cadillac Desert

Farmer and sons walking in the face of a dust storm.
Cimarron County, Oklahoma. April, 1936.
Technological Visions of Utopia

How do science and technology shape the frameworks for imagining utopian or dystopian societies?

Sir Thomas More gave a name to the philosophical ideal of a “good society” — a word that is now a part of common language: utopia. In the almost 500 years since More’s Utopia appeared, changes in society — including enormous advances in science and technology — have opened up new possibilities for the utopian society that More and his predecessors could not have envisioned. At the same time science and technology also entail risks that suggest more dystopian scenarios — in their most extreme form, threats to humanity’s very survival. We will look at several works that consider how literary visions of society have evolved with the progress of science and technology. The readings begin with More and include examples of more technologically determined visions of the late 20th century, as imagined in works of science fiction.

Rob Robinson (German)
Professor Robinson claims to have the largest science fiction collection at Stanford.

Eric Roberts (Department of Computer Science)
Professor Roberts has had a network address since 1970.

SELECTED COURSE MATERIAL

Thomas More, *Utopia*
George Orwell, *1984*
Aldous Huxley, *Brave New World*
Neal Stephenson, *Snow Crash*
Ursula LeGuin, *The Dispossessed*
Winter Quarter *Thinking Matters* Courses

Bioethical Challenges of New Technology

Folklore and Literature in Russia and Beyond: Vampires, Talking Cats, and Frog Princesses

From the Closed World to the Infinite Universe: Science, Philosophy, and Religion

How Does Your Brain Work?

Rules of War

A Transition toward Sustainability

Ultimate Meanings: The Stories Buddhists Tell

Who Owns the Past? Archaeology, Heritage, and Global Conflicts
Bioethical Challenges of New Technology

How might we apply ideas from ethical theory to contemporary issues and debates in biotechnology?

This course will provide critical encounters with some of the central topics in the field of bioethics, with an emphasis on new technologies. Controversies over genetic engineering, stem cell research, reproductive technologies, and genetic testing will provide an opportunity for you to make critical assessments of arguments and evidence. We will begin with an overview of the field and the theoretical approaches to bioethics that have been derived from philosophy. You will then have the opportunity to engage in debate and learn how to identify underlying values and how to apply ideas from ethical theory to contemporary problems.

SELECTED COURSE MATERIAL

- Arthur Caplan, Glenn McGee, and David Magnus, “What is immoral about eugenics?”
- John Robertson, “Genetic Selection of Offspring Characteristics”
- Francois Baylis, “Animal Eggs for Stem Cell Research: A path not worth taking”
- Charles Murdoch and Christopher Scott, “Stem Cell Tourism and the Power of Hope”
- Paul Root Wolpe, Kenneth Foster, and Daniel Lengleben, “Emerging Neurotechnologies for Lie-Detection: Promises and Perils”

David Magnus (School of Medicine)
Professor Magnus is Thomas A. Raffin Professor of Medicine and Biomedical Ethics and Professor (Teaching) of Pediatrics, and the Director of the Stanford Center for Biomedical Ethics. He is the co-Editor-in-Chief of the American Journal of Bioethics and President of the Association of Bioethics Program Directors.
Folklore and Literature in Russia and Beyond: Vampires, Talking Cats, and Frog Princesses

For the past two centuries, elite writers, composers, and artists have found inspiration in the stories, songs, and beliefs of their grandparents, their servants (or their slaves), and their neighbors. This class asks what “folklore” means and what purposes – political and philosophical as well as artistic – it can serve. We begin with examples from around the world: the German Brothers Grimm as well as the Americans Alan and John Lomax. Then we turn to Eastern Europe and the role it has played in the Western European and American imagination as the home of the archaic and the authentic, from the vampires of Transylvania to the oral epics of the Bosnian Serbs to the nostalgic idea of the Jewish shtetl to the fantasy of Soviet communism as a survival of a pre-capitalist order. Students will analyze both folk and elite texts, and will experiment with gathering oral texts and transforming them just as the writers we study did.

Gabriella Safran (Slavic)
Professor Safran has written books and articles about Russian and Yiddish literature and folklore. She is currently researching the relationship between literature and the history of listening in late imperial Russia.

What is “folklore” and what is its purpose? How do we decide if something is authentically “folk” and does it matter? Why are Eastern Europe and Russia associated with the idea of folklore?

SELECTED COURSE MATERIAL
- Folksongs from around the world
- Russian fairy tales
- Bram Stoker, Dracula
- Albert Lord, The Singer of Tales
- Fiddler on the Roof
- Mikhail Bulgakov, Master and Margarita

Baba Yaga from Vassilisa the Beautiful, 1899. Ivan Bilibin
From the Closed World to the Infinite Universe: Science, Philosophy, and Religion

How and why did the Copernican revolution in astronomy — which placed the Sun at the center of the solar system rather than the earth — have such a profound effect on the relationship between science, philosophy, and religion? How did it ultimately lead to the secularization of modern society?

This course examines the defining moments when western science, philosophy, and religion became disentangled from one another, eventually leading to the development of our modern secular culture. As background for understanding the Copernican revolution and its aftermath, we begin with a brief examination of Plato and Aristotle, and how these two Ancient Greek thinkers were later taken up in the medieval period, resulting in a synthesis in which science, philosophy, and religion were intimately interconnected. Against this background we will then focus on the scientific revolution of the 16th and 17th centuries and encounter thinkers who during their lifetimes defied easy categorization: Were Galileo and Newton philosophers or scientists? What about Descartes and Leibniz? In reading texts that we now understand as belonging to one or the other category, we will see how the two disciplines eventually became sharply distinguished from one another — which then led, in turn, to the modern separation between science and religion.

Michael Friedman (Philosophy)

Professor Friedman works primarily in the fields of history and philosophy of science. He studies the development of modern science and philosophy as secular matters after Kant and Newton. He also concentrates on the prospects for a new reconciliation between science, philosophy, religion, and democracy in our own time.

SELECTED COURSE MATERIAL

- Plato, Republic
- Aristotle, Physics
- Galileo, Discoveries and Opinions
- Descartes, Philosophical Writings
- Newton, Philosophical Writings
- Leibniz and Clarke, Correspondence

The sky according to Copernicus.
How Does Your Brain Work?

How can we learn to formulate questions about the brain that are observable, testable, and answerable? What is the relationship between the biology and chemistry of the brain and the mind that lets us talk, walk, laugh, love, learn, remember, and forget? What might neuroscience tell us about what makes us human?

The human brain is the most complex organ we know. It has evolved over time by adapting to the various behavioral and environmental constraints. We will examine the validity of common beliefs about the brain and learn about the structure of the brain and of the nervous system, how the elements of the brain function and how together these units produce action. The brain evolved in response to natural selection like all other biological structures. We will use evolutionary comparisons to illuminate important questions about brain function including: What are the origins and consequences of brain damage, how and where do drugs act, how do you collect information about the world and how do you interpret and understand it? Through highly interactive lectures and discussions, this course will be directed at understanding the biological mechanisms of brain function, from its individual components to functioning brains. You will learn to analyze how the science of the brain has emerged through the study of important experiments and other observations. In the final project, you will learn to critically assess, analyze, and write about a popular media representation of brain science from available scientific literature.

SELECTED COURSE MATERIAL

Selected articles from journals including *Nature, Science, The Lancet*, and *Cogn Neurosci*

Russell D. Fernald (Biology and Human Biology)
Professor Fernald’s research focuses on how social behavior influences the brain.
When, if ever, is war justified? How are ethical norms translated into rules that govern armed conflict? Are these rules still relevant in light of the changing nature of warfare?

We will examine seminal readings on just war theory, investigate the legal rules that govern the resort to and conduct of war, and study whether these rules affect the conduct of states and individuals. We will examine alternative ethical frameworks, competing disciplinary approaches to war, and tensions between the outcomes suggested by ethical norms, on the one hand, and legal rules, on the other. Students will engage actively with these questions by participating in an interactive role-playing simulation, in which they will be assigned roles as government officials, advisors, or other actors. The class will confront various ethical, legal, and strategic problems as they make decisions about military intervention and policies regarding the threat and use of force in an international crisis.

Scott D. Sagan (Political Science)
Professor Sagan served as a special assistant to the Director of the Organization of the Joint Chiefs of Staff before coming to Stanford and is now the Caroline S.G. Munro Professor of Political Science and a Senior Fellow at the Center for International Security and Cooperation and the Freeman Spogli Institute.

Allen S. Weiner (School of Law)
Professor Weiner served as an attorney in the U.S. State Department for over a decade before joining the Stanford faculty and is currently the Director of the Stanford Program in International and Comparative Law, and Co-director of the Stanford Center on International Conflict and Negotiation.
The term “sustainability” seems to be everywhere. Businesses, cities, non-governmental organizations, individuals, and universities such as Stanford use the term to characterize decisions that make sense for the well-being of people as well as the environment. Beyond the popular use of the term is an emerging field of study that focuses on the goals of sustainable development—improving human well-being while preserving Earth’s life support systems (air, water, climate, ecosystems) over the long run—and explores how science and technology can contribute to the solution of some of the most critical problems of the 21st Century. The goal of this course is to engage you in critical thinking and analysis about complex sustainability challenges and to encourage you to consider new perspectives on the need for integrative solutions that draw on different disciplines. We will examine some of the major problems of sustainable development (including issues related to food, water, and energy resources, climate change, and protection of ecosystem services), grapple with the complexities of problem solving in human-environment systems, and participate in the design of effective strategies and policies for meeting sustainability goals. You will learn to develop policy briefs addressing sustainability issues in the university, local communities, state and the nation as well as work on team projects with decision makers that address real-life challenges in your local area.

**Pamela Matson (Dean of the School of Earth Sciences)**

Professor Matson is a Senior Fellow at the Woods Institute for Environment, and McMurtry University Fellow in Undergraduate Education. She teaches and carries out research on a range of sustainability challenges related to food production and global climate change.

**Jeffrey Koseff (Civil and Environmental Engineering)**

Professor Koseff is the Co-Director of the Stanford Woods Institute, and Forman University Fellow in Undergraduate Education. His research and teaching focuses on the interaction between physical and biological systems in natural aquatic environments.

What are the most critical sustainability challenges facing us in this century? How can natural and social sciences, humanities, and technology fields interact to contribute to their solution? How do we balance the needs and desires of current generations with the needs of future generations?

**SELECTED COURSE MATERIAL**

Ultimate Meanings: The Stories Buddhists Tell

Does human existence have some ultimate meaning or purpose? What are we here for, and how should we live our lives? Can the stories used by the world’s religions help us answer these questions?

For a religion which teaches that we have no selves, Buddhism has produced many great stories with many great characters. In this course students will read and think about some of these stories, drawn from the Buddhist tradition in the many forms which it developed as it spread across Asia. We will look at the biography of the founder, the Buddha, the tales of his previous lives, the stories of his disciples, and of later saints, heroes, religious practitioners and ordinary folk. In reading these stories we will investigate how they elaborate a persuasively constructed world of meaning in terms of which people can make sense of their own personal histories, and from which they can learn how to lead a good and meaningful life.

Paul Harrison (Religious Studies)
A native New Zealander, Professor Harrison specializes in the study of Buddhist literature and in the history of Buddhism. He is particularly interested in the connections between visionary experience and the production of texts.
Who Owns the Past? Archaeology, Heritage, and Global Conflicts

Is cultural heritage a universal right? How does archeology contribute to our understanding of the intersections of past and present?

This course questions the relationship between archaeology and the politics of heritage by focusing on important sites around the globe that have experienced political conflicts over ownership of the past. Students study archaeology through virtual exploration of archaeological sites, landscapes, and architecture as well as through hands-on experience with objects of material culture in the archaeology lab at Stanford. At the same time, students analyze how these places, buildings, and objects are transformed into matters of heritage. How does archaeology provide a unique perspective for understanding contemporary issues of culture, religion, and politics? Clearly history matters, but it is often archaeological sites and monuments that become the flash-points of global conflict. Far from being a neutral scholarly exercise, archaeology is embedded in heated present-day debates about heritage and its preservation over time. After taking this course, some students have been inspired to participate in archaeological digs, often on location at sites they have studied.

Ian Hodder (Anthropology and Archaeology)

For 20 years Professor Hodder has excavated in Turkey, where he runs a large international project. He writes about the spread of farming from the Middle East and about the role of cultural heritage in contemporary societies.

SELECTED COURSE MATERIAL
The Archaeological Sites and Landscapes at:
Çatalhöyük – Turkey
Stanford University
Mesopotamia and Egypt
Ayodhya, India – Rama temple and Babri Mosque
Jerusalem – al-Haram ash-Sharif or the Temple Mount

Ancient agricultural tools.
Spring Quarter *Thinking Matters* Courses

The Cancer Problem: Causes, Treatments, and Prevention

Century of Violence

The Conscious Mind: The Philosophy and Biology of Consciousness, Memory, and Personal Identity

Evil

Evolution on Earth

Media and Message

Networks: Ecological, Revolutionary, Digital

Thinking through Africa: Perspectives on Wealth, Well-Being, and Development

The Water Course
The Cancer Problem: Causes, Treatments, and Prevention

How has our approach to cancer been affected by clinical observations, scientific discoveries, social norms, politics, and economic interests?

Approximately one in three Americans will develop invasive cancer during their lifetime; one in five Americans will die as a result of this disease. This course will expose you to multiple ways of approaching the cancer problem, including laboratory research, clinical trials, population studies, public health interventions, and health care economics. We will start with the 18th century discovery of the relationship between coal tar and cancer, and trace the role of scientific research in revealing the genetic basis of cancer. We will then discuss the development of new treatments for cancer as well as measures to screen for and prevent cancer, including the ongoing debate over tobacco control. Using cancer as a case study, you will learn important aspects of the scientific method including experimental design, data analysis, and the difference between correlation and causation. We will consider how science can be used and misused with regard to the public good. You will also examine ways in which social, political, and economic forces shape our knowledge about and response to disease.

Joseph Lipsick (School of Medicine)

Professor Lipsick’s career as a poet went astray when he found a job at the unemployment office working in a laboratory, fell in love with research, and eventually became obsessed with understanding how mistakes in our own genes cause cancer. He is a professor of Pathology, Genetics, and Biology.
Century of Violence

What is modern about modern mass violence?

This course explores the evolution, varieties, and logic of mass violence from the early 20th century to the present day. You will engage with and analyze primary accounts of such violence by victims, observers, perpetrators, and courts. We will then consider the effectiveness of various efforts to confront genocides and crimes against humanity in international courts and institutions, past and present. We start with the emergence of genocide as a modern, international issue; proceed with colonial massacres in early 20th century Africa; move to the Armenian genocide in the Ottoman Empire and WWI; Nazi and Nazi-inspired racial murder; communist-induced mass violence in the Soviet Union and Asia; ethnic cleansing in former Yugoslavia; and end with an examination of the recent genocides in Rwanda, Sudan, and the Middle East.

SELECTED COURSE MATERIAL

Yuan Gao, *Born Red*
Eugenia Ginzburg, *Journey into the Whirlwind*
Daoud Hari, *The Translator*
Ernst Junger, *Storm of Steel*
Jean Hatzfeld, *Machete Season*
Primo Levi, *Survival in Auschwitz*

**Amir Weiner (History)**
Professor Weiner specializes in the history of totalitarian regimes, World War II, and the former Soviet Union.
The Conscious Mind: The Philosophy and Biology of Consciousness, Memory, and Personal Identity

How do our common-sense conceptions of the mind and of ourselves hold up against the growing body of psychological and neurobiological knowledge of the brain? How is your mental life anchored to your physical self?

You wake up from a dreamless sleep and suddenly everything’s buzzing with color and sound. Somehow your brain sustains this rich landscape of experience, integrating it with a repertoire of memories to constitute yourself. This course probes the neurobiological bases of these familiar yet miraculous facets of the mind. You will learn to analyze primary philosophical and scientific texts, use basic knowledge of the brain to assess and even innovate experiments that could shed light on the nature of consciousness and personal identity.

Alexis Burgess (Philosophy)
Professor Burgess works mainly in metaphysics and the theory of representation, on topics like truth, fiction, identity, and existence. He also writes and produces plays with A/K/A Theater Company.

Craig Heller (Biology)
Professor Heller does research on the neurobiology of sleep, biological rhythms, learning, and memory. His work on human physical performance has led to technology used by Stanford athletes and many others.

SELECTED COURSE MATERIAL

C. Blakemore,  
_The Mechanics of Mind_

Thomas Nagel,  
“What is it like to be a bat?”

Descartes, _Meditations II_

D. Griffin, _Animal Intelligence_

H. Pringel,  
“The Origins of Creativity”

Quiroga, Fried, and Koch,  
“Brain Cells for Grandmother”

Phrenology.
Evil

What is evil? Are we naturally good or evil? How should we respond to evil?

There are many books and courses that focus on the good life or the virtues. Yet despite their obvious apparent presence in our life and world, evil and the vices are rarely taken as explicit topics. We will read philosophical and literary texts that deal with the question of evil at an abstract level and then use other readings that help us focus on more practical implications of the meaning and consequences of evil. By exploring the issue of evil, we will confront larger questions about the nature of humans, the responsibility to address evil as a society, and the moral and ethical ways we might begin to define what is evil.

Chris Bobonich (Philosophy)
Professor Bobonich works on the history of Greek philosophy and is interested in questions that, if they can be answered, are not fully answered by the sciences.

Adrian Daub (German)
Professor Daub works on nineteenth and twentieth century German literature, philosophy, and music.

SELECTED COURSE MATERIAL
Goethe, Faust
Nietzsche, The Genealogy of Morality
Rousseau, A Discourse on the Origin of Inequality.
Machiavelli, The Prince
Fritz Lang, M (film)

Evolution on Earth

The history of life on earth is inextricably intertwined with the history of geological change on earth. Early ideas about biological evolution came from young people who went on wild adventures. Their observations generated ideas about what must have happened; but since, at the time, little was known about the mechanisms of inheritance, they were never to know how it happened. In time, two major advances came along: a much more comprehensive fossil record that substantiated many of their ideas, and a deep understanding of genetic mechanisms of inheritance. In parallel, the idea of geologic forms as dynamic, especially volcanic eruptions and plate tectonics, provided a new narrative of earth history that informed ideas about spreading and changing life forms. Then mechanisms of developmental biology showed how inherited genes carry out recipes for building bodies with certain structures.

We will examine evolution from scientific, historical, and artistic perspectives, including evolution of microbes, plants, animals, and humans, and implications of evolution for medicine. The course will include introductory lectures, some in class and some online, discussion sessions, and three team projects for each student. Student teams will examine topics of their choosing in depth and create reports that will be assembled into a comprehensive book.

Matthew Scott (School of Medicine)
Professor Scott leads a research group that studies molecular and genetic mechanisms of developmental biology and their connections with cancer and birth defects, focusing particularly on evolutionarily ancient control systems that organize and pattern developing embryos. He is a professor of Developmental Biology, Genetics, Bioengineering, and Biology.

SELECTED COURSE MATERIAL
Charles Darwin,
The Origin of Species
Jonathan Weiner,
The Beak of the Finch
Neil Shubin, Your Inner Fish
Walter Alvarez,
T. rex and the Crater of Doom
Visual media are conduits for information and narrative but are experienced very differently. We will explore a range of historical and contemporary media, with an emphasis on the ways that different media present, organize, and structure information as forms that are “read” or experienced. You will be asked to compare, for example, how different media explore the same or similar content: examples might be viewing the film version of *Hellboy* as compared to reading the comic book, or considering how a historical event such as the D-Day landings is understood differently via photography, film, and interactive games. We start with considerations of the illuminated book, print, painting, and photography and move to the more recent cinema, television, and interactive and computational media.

**Scott Bukatman (Art and Art History)**

Professor Bukatman teaches in the Film and Media Studies Program, and his research highlights the ways in which popular media (film, comics) and genres (science fiction, musicals, superhero narratives) mediate between new technologies and human perceptual and bodily experience. His latest book is *The Poetics of Slumberland: Animated Spirits and the Animating Spirit*, and it makes a great gift.

**Henry Lowood (History of Science and Technology Collections, University Libraries)**

Dr. Lowood is curator for history of science and technology collections and for film and media collections at Stanford University. He has led the Silicon Valley Archives since forever and, since 2000 he has led “How They Got Game,” a research and archival preservation project devoted to the history of digital games and simulations. His most recent book is *The Machinima Reader*, published by MIT Press and co-edited with Michael Nitsche.
**Networks: Ecological, Revolutionary, Digital**

**Why is the word network used to describe the behavior of computers, ants, and people? Do all these networks share certain properties? What might we learn by comparing them?**

We like to think of social networks as a contemporary phenomenon. But before Facebook, individuals organized themselves in social networks; before Twitter, revolutionaries used media to communicate and coordinate their messages. In fact, even animal societies are networked. Through project-based exercises, you will learn to study, analyze, and write about networks from the perspectives of a biologist, a computer scientist, and a historian. We will retrace social networks in the 18th and 21st centuries, observe the organization of animal networks, and investigate the structure of online networks. Our goal is to use the concept of the network to deepen our understanding of the natural world, historical change, and our own social lives.

**Dan Edelstein (French and Italian)**
Professor Edelstein works on 18th-century intellectual networks and revolutions.

**Deborah Gordon (Biology)**
Professor Gordon studies ant societies in Arizona and Mexico.

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**SELECTED COURSE MATERIAL**

Deborah Gordon, *Ant Encounters: Interaction Networks and Colony Behavior*

Tom Standage, *The Victorian Internet*

Sergey Brin and Lawrence Page, “The anatomy of a large-scale hypertextual Web search engine”

Lorraine Daston, “The Ideal and Reality of the Republic of Letters in the Enlightenment”

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Harvester ants. Photo by Steve Jurvetson.
Thinking through Africa: Perspectives on Wealth, Well-Being, and Development

What is human well-being? How do we define it? How do we measure it? What do we mean when we talk about certain parts of the world as “developed” and others as “underdeveloped” or “developing”? How do improvements in human well-being come about?

In this course, we will explore concepts of wealth and well-being by focusing on the African experience. We will equip you with the tools and techniques of three diverse disciplines – history, political science, and engineering – as you tackle essential questions about the meaning of development and how to measure it, the long-run impact of historical events, the role of politics in the development process, and the challenges of engineering improvements to human well-being. You will tackle primary source documents as we explore the slave trade and colonial rule; you will engage cutting-edge social science as we dissect contemporary trends; and you will learn how engineers are grappling with the importance of the contexts in which they operate. Students will also engage directly with contemporaries at African universities throughout the quarter.

James Campbell (History)
Professor Campbell is the Edgar E. Robinson Professor of History at Stanford. His most recent book is “Middle Passages: African American Journeys to Africa, 1787-2005”.

Jenna Davis (Civil and Environmental Engineering)
Professor Davis is Associate Professor of Civil & Environmental Engineering and the Higgins-Magid Senior Fellow at the Stanford Woods Institute for the Environment. Her research focuses on water supply and sanitation in low- and middle-income countries, and she is currently working on studies in Mozambique and Kenya.

Jeremy Weinstein (Political Science)
Professor Weinstein is Associate Professor of Political Science, Ford Dorsey Director of African Studies, and Senior Fellow at the Freeman Spogli Institute for International Studies. He conducts research on civil wars and political violence, ethnic politics, the political economy of development, and democratic accountability. He recently returned to Stanford after serving for two years as Director of Development and Democracy on President Obama’s National Security Council staff.

SELECTED COURSE MATERIAL

Amartya Sen, Development as Freedom
Olaudah Equiano, Interesting Narrative of the Life of Olaudah Equiano, the African
Daron Acemoglu and James Robinson, Why Nations Fail: The Origins of Power, Prosperity, and Poverty
Kristin Komives, Dale Whittington and Xun Wu, Infrastructure Coverage and the Poor: A Global Perspective
The Water Course

Water is essential for life. But, around the world, governments and citizens are challenged to balance the human demands on our freshwater resources, while protecting the integrity of natural ecosystems. At the core of the challenge is our limited understanding, in many parts of the world, of the watershed-scale hydrologic cycle — the course that the water follows from rainfall, to river, to groundwater, to ocean, to atmosphere, and back again. The Water Course takes students along that course, exploring the role that natural systems and human systems play in impacting both the quantity and quality of our freshwater. We will consider questions surrounding decisions about water allocation, and discuss new scientific methods that provide support for science-based decision making in the management of freshwater resources. You will connect global-scale issues to your personal experiences with water through a quarter-long project investigating both water quantity and water quality for a city or watershed in the western U.S. You will produce a numerical model, and make approximations, to describe a complex natural system. Using online resources you will explore the pathway that water takes from rainfall to your tap.

Rosemary Knight (Geophysics)
Professor Knight’s research and teaching interests focus on the use of geophysical imaging methods to “see into Earth” for groundwater evaluation and management.

SELECTED TOPICS
Water in Nature
Water Quality
Freshwater as a Managed Resource
Modeling a Complex System

Burney Falls, California.
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Thinking Matters courses offer you the opportunity to select among a wide range of topics, as you join with the rest of the Class of 2017 in a common freshman experience. Each course addresses important questions and problems, and demonstrates how thoughtful consideration can address them. Your freedom to choose from among these courses signals that it is your responsibility to structure your liberal education. Stanford invites you to identify your top priority, and you will also have the opportunity to enroll in more than one Thinking Matters course during your freshman year.

—Russell Berman, Director, Thinking Matters Program, Walter A. Haas Professor in the Humanities