Interphase EDGE: Pre-First-Year Summer Component

SP.100 Interphase
Prereq: Commitment to register as a first-year student in the Fall
Units arranged [P/D/F]

Interphase is a seven-week program designed to enhance the academic success of students entering MIT. The program has a dual focus: it gives students an introduction to the MIT experience by exposing them to the rigors of a full subject load while simultaneously preparing them for academic success beyond MIT. The program includes calculus; chemistry; physical education; physics; writing, oral presentation and teamwork skills; and supporting academic activities, including small-group learning.

Students can earn transcript credit for subjects taken in the program, sometimes resulting in advanced placement in corresponding subjects taken in the Fall. Activities include day trips to area cultural, recreational, and business sites. Students participate in a range of personal and educational development seminars and activities designed to ensure their smooth transition to college life.

S. Kalloo

Institute-wide Discovery Subjects

SP.245 The Sum of All Courses
Prereq: None
U (Fall)
Not offered regularly; consult department
2-0-0 units

Provides an overview of the wide variety of majors and joint majors as well as minors and concentrations at MIT. At each lecture, faculty from two to three departments describe their fields. One-hour seminars and panels are given on informative and engaging topics such as, "The Rationale Behind the MIT Curriculum," "The Purpose of an Education," "Integrating by Parts and Other Life Hacks," "Etiquette and Why It Is Important," "So, Darwin, Shakespeare, and Newton Walk into a Bar," "How to Avoid Burnout," "What is your Implicit Bias?," "How to be a Good Human," "Social Impact, Unintended Consequences, and Moral Hazards," and include panel discussions with MIT Administration and MIT’s Distinguished Professors. Subject can count toward the 6-unit discovery-focused credit limit for first-year students.

S. A. Clarke, M. Jonas

SP.246 The Future: Global Challenges and Questions
Prereq: None
Acad Year 2021-2022: Not offered
Acad Year 2022-2023: U (Fall)
2-0-1 units

Explores global challenges through the perspective of an array of majors / disciplines at MIT. Generative and creative questioning activities and reflective discussions introduce the intellectual breadth at the Institute and provide students with tools to develop their ability to question the world and their place in it. Aims to inspire and guide students to consider how they will shape and become a part of the future they want. Subject can count toward the 6-unit discovery-focused credit limit for first year students.

J. E. Fernandez, D. Darmofal, W. Deringer, R. Rigobon

SP.247 Exploring Majors at the Intersection of Engineering, Life Sciences, and Medicine
Prereq: None
U (Spring)
Not offered regularly; consult department
1-0-2 units
Credit cannot also be received for SP.247A

Interactive introduction to the several majors at MIT that offer curricula bridging engineering and life sciences, through presentations by faculty, current students, and alumni. Representatives of these departments (Courses 1, 2, 3, 5, 6, 6-7, 7, 9, 10, and 20, as well as the BME minor) cover aptitudes of typical students, culture, class offerings and roadmaps, and unique opportunities. Provides first-year students practical advice about how to select, prepare for and thrive in each major. Students taking 3-unit version of SP.247 complete reflection papers outside of class. Subject can count toward the 6-unit discovery-focused credit limit for first year students.

C. Carter
SP.247A Exploring Majors at the Intersection of Engineering, Life Sciences, and Medicine
Prereq: None
U (IAP)
1-0-0 units
Credit cannot also be received for SP.247
Interactive introduction to the several majors at MIT that offer curricula bridging engineering and life sciences, through presentations by faculty, current students, and alumni. Representatives of these departments (Courses 1, 2, 3, 5, 6, 6-7, 7, 9, 10, and 20, as well as the BME minor) cover aptitudes of typical students, culture, class offerings and roadmaps, and unique opportunities. Provides first-year students practical advice about how to select, prepare for and thrive in each major. One-unit version of SP.247 does not include work outside of class. Subject can count toward the 6-unit discovery-focused credit limit for first year students.
S. A. Clarke, M. Jonas

SP.248 Discover the Magic of the Ways of Thinking: NEET!
Prereq: None
U (Fall, Spring)
1-0-2 units
Introduces students to the New Engineering Education Transformation (NEET) Ways of Thinking, which are cognitive approaches for tackling complex challenges, valued by industry and for thriving in an uncertain and rapidly changing world. The NEET Ways of Thinking include, among many others, creative, ethical, critical, analytical, and systems-level thinking. Student teams engage in challenge-based learning in interdisciplinary engineering education via the NEET program threads, namely, Advanced Materials Machines, Autonomous Machines, Digital Cities, Living Machines, and Renewable Energy Machines. Student teams learn how to apply various Ways of Thinking for solving these challenges, including practical methods and tools which they can later use at MIT and beyond. Subject can count toward the 6-unit discovery-focused credit limit for first-year students.
Rea Lavi

SP.250 Transforming Good Intentions into Good Outcomes
Prereq: None
U (Fall)
2-0-1 units
Explores hard choices, ethical dilemmas, and the risk of failure in the humanitarian, tech, climate change, and health sectors. Students examine case studies based on challenges faced by MIT alums, faculty, staff, students or community practitioners, and engage in simulations and facilitated discussions. Exposes students to ethical frameworks and standards for social engagement and intervention. Considers the choices faced, stakeholders involved, possible impact, and relevant MIT resources. Students produce a set of guiding questions to ask of themselves and others as they embark on social change work. Subject can count toward the 6-unit discovery-focused credit limit for first-year students. Limited to 20; preference to first-year students.
S. Bouchard, A. Hynd

SP.251 How to Change the World: Experiences from Social Entrepreneurs
Prereq: None
U (Fall)
2-0-1 units
Every week, students meet a new role model who demonstrates what it means to change the world through social entrepreneurship. Students meet individual entrepreneurs, get immersed in the ecosystem that supports them, and visit MIT labs and startups in the Cambridge innovation community. Each session covers an aspect of social entrepreneurship, from identifying opportunities for change to market fit to planning for scale. Through these speakers and field trips, students gain a greater understanding of how technology-based, impactful solutions can address global challenges. Students learn to identify and address social and environmental problems and understand the relevance of this work for their time at MIT. They will see how to bring their ideas to fruition and extend their ties with the Solve community. Subject can count toward the 6-unit discovery-focused credit limit for first-year students. Limited to 25; preference to first-year students.
K. Zolot
**SP.252 Careers in Medicine**  
Prereq: None  
U (Fall)  
2-0-1 units  

Through this course, students will explore careers in medicine and health care. It will also explore potential majors for students looking to go into these different careers, which include physicians, physician-scientists, research scientists, biomedical engineers, bioinformatics analysts, computational biologists, health data scientists, health system managers, and health economists. Majors could include biological engineering, biology, chemical engineering, mechanical engineering, computer science, and more. Allows students to explore how they can have an impact in the field of medicine in a variety of different ways. Exposes students to career paths that are patient-facing (clinical) as well as career paths that are behind the scenes. Includes field trips to nearby labs and companies. Subject can count toward the 6-unit discovery-focused credit limit for first-year students. Limited to 25; preference to first-year students.  
A. Carlsen-Bryan, A. Rosser

**SP.253 Challenge Your Self-Identity to Grow and Achieve Life and Career Happiness**  
Prereq: None  
Acad Year 2021-2022: Not offered  
Acad Year 2022-2023: U (Spring)  
1-0-1 units  

Are your goals your own? Or do they represent what others wish for you to achieve? Have the evil tendrils of impostor syndrome ever plagued you? We are our own worst enemies when it comes to our success in our lives and careers. Throughout our lives, we absorb labels, identities, and imposed goals from those around us. Reflecting, and broadening these goals can help one break out of fixed thinking and start focusing on how to communicate their ideas and goals to others. This course seeks to challenge students to shift from a static mindset into one of growth, seek contentedness through purpose, and gain skills to better present themselves and their ideas. Instructional activities will include self-reflection (written/oral), interviews, alum panels, and short assignments outside the classroom. Outside assignments include individual and group work. Subject can count toward the 6-unit discovery-focused credit limit for first-year students. Limited to 25; preference for first-year students.  
J. Crim

**SP.254 Low Carbon Energy in Research and Application**  
Prereq: None  
U (Spring)  
2-0-1 units  

One of the major challenges of our time is to provide more energy to a growing world population while simultaneously reducing carbon emissions to combat climate change. Climate science shows that it is urgent to accomplish this soon, as the residence times of most greenhouse gasses are large. Subject offers exposure to relevant research that is being done in this context at MIT. Students review short papers on low carbon technologies and climate change; hear from faculty, researchers, and industry representatives associated with the MITEI Low Carbon Energy Centers; and create a digital story exploring the connections between the challenges, research, and current deployment of technologies. Offers context to students' future academic work and exposes students to ways in which many MIT majors apply to energy. Subject can count toward the 6-unit discovery-focused credit limit for first-year students.  
B. Hager, A. Danielson

**SP.255 Eating Culture: An Exploration of Cultures around the World through Food**  
Prereq: None  
Acad Year 2021-2022: Not offered  
Acad Year 2022-2023: U (Fall)  
1-0-1 units  

Introduces students to different cultures around the world via the culinary dishes they enjoy. Examines the varying histories, climates, migration patterns and religions that shape a culture. Each class, students explore and--of course!--taste one dish from one country. Work outside of class includes readings and films which reveal the cultural meanings of food. May include field trips to restaurants or neighborhoods in Boston and Cambridge. Subject can count toward the 6-unit discovery-focused credit limit for first-year students. Limited to 15.  
Staff
SP.256 Informed Philanthropy in Theory and Action
Prereq: None
U (Spring)
2-0-1 units

Explores the potential and pitfalls of philanthropy as a mechanism for social change. Students assess the work of community agencies to address challenges and opportunities facing MIT's neighboring communities, with particular focus on community representation, equity, and social justice. Class culminates with students making a group decision on how the Learning by Giving Foundation (which is partnering with the class) will disperse $10,000 to local community agencies. Each session includes a presentation by a local community agency, grant making foundation, and/or individual philanthropist. Through class discussion and supporting materials, students examine the interaction between philanthropy and social change, including the role of philanthropists past and present in shaping social change and social conservatism. Subject can count toward the 6-unit discovery-focused credit limit for first-year students. Limited to 20.
S. Bouchard, A. Hynd, J. Bassett

SP.257 MISTI Career Connections: Energy (New)
Prereq: None
U (Fall)
1-0-2 units

Provides students with an opportunity to network and think strategically about their global career in the energy sector. Content is international, drawing from MISTI's global network of companies and institutions, and professional, with attention to energy research and skills necessary to work in the energy field. Through weekly discussion-based sessions, students learn from numerous sources: MISTI hosts, MITEI, alumni, and more. As a First-Year Discovery subject, focuses on career goals and skills. Open to students of all levels and disciplines. This subject can count toward the 6-unit discovery-focused credit limit for first-year students. Limited to 20.
D. Dolev, S. Koltai, K. Schwind

Terrascope

SP.310 Engagement and Discovery Through the Terrascope Field Experience
Prereq: None
U (Spring; partial term)
1-1-1 units

Each spring, first-year students in the Terrascope Learning Community spend a week exploring a sustainability-related problem in an off-campus site. During the trip, students engage with communities affected by the problem and people taking a wide range of approaches to address it. In this course, students will integrate and communicate their experience from the trip, with the aim of deepening their consideration of the year's problem and how the field experience impacts their thoughts about their own pathways through MIT and beyond. Students will learn about best practices and opportunities for civic engagement related to the year's topic, and they will explore ways of communicating their learnings from the field experience. Limited to first-year students participating in the Terrascope spring break field experience.
D. McGee, E. Chambers, A. Epstein

SP.35UR Undergraduate Research in Terrascope
Prereq: None
U (Fall, IAP, Spring, Summer)
Units arranged [P/D/F]
Can be repeated for credit.

Undergraduate research opportunities in Terrascope.
Staff
**SP.360 Terrascope Radio**

**Prereq:** None  
**U (Spring)**  
**3-3-6 units. HASS-A; CI-H**

An exploration of radio as a medium of expression and communication, particularly the communication of complex scientific or technical information to general audiences. Examines the ingredients of effective radio programming, drawing extensively on examples from both commercial and public radio. Student teams produce, assemble, narrate, record and broadcast/webcast radio programs on topics related to the complex environmental issue that is the focus of the year's Terrascope subjects. Includes multiple individual writing assignments that explore the constraints and opportunities in radio as a medium. Limited to 15 first-year students.

*A. W. Epstein*

**SP.361 Majors and Careers Through a Terrascope Lens**

**Prereq:** None  
**U (IAP)**  
**1-0-1 units**

Can be repeated for credit.

MIT alumni pursuing sustainability-oriented careers describe ways in which their major and career choices have provided them with the lenses through which they see the problems they work to solve. Students participate in guided reflection, focused on making the discussion relevant to their own personal situations and affinities. Students strengthen their ability to think deeply about their goals, for MIT and for the world beyond, and come into direct contact with alumni who can continue to mentor them through this process. Open to all undergraduates, regardless of Terrascope affiliation.

*D. McGee, A. W. Epstein*

**SP.801 First-Year/Alumni Summer Internship Program II**

**Prereq:** SP.800  
**U (Fall, Summer)**  
Not offered regularly; consult department

Units arranged

Students who have completed the subject requirements for SP.800 and work in an approved internship or research experience are eligible for SP.801, the second component of the First-year/Alumni Summer Internship Program. Students continue their career development and prepare for their sophomore internship search through this course.

*C. Capozzola*

**SP.3S50 Special Subject: Terrascope**

**Prereq:** Permission of instructor  
**U (Fall, Spring)**  
Units arranged

Can be repeated for credit.

Covers areas of study not included in the regular Terrascope curriculum. Preference to students in Terrascope.

*Staff*