Special Programs

Interphase EDGE: Pre-First-Year Summer Component

SP.100 Interphase
Prereq: Commitment to register as a first-year student in the Fall
U (Summer)
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

Seminar XL

SP.110 Program XL: You Can Be a Success at MIT
Prereq: First-year undergraduate standing
U (Fall, Spring)
Units arranged [P/D/F]

Academic enrichment program for first-year students, XL utilizes the innovative and effective small-group learning concept to enhance academic performance in calculus and science. Students meet in study groups of five to six participants with facilitators trained in effective classroom techniques and concept focus. Study groups help students to reinforce concepts learned in the regular curriculum, and help them gain mastery of concepts and problems that are often more challenging than those dealt with during lecture. Emphasizes the full participation of each student with the facilitator acting as guide. The regularity of weekly meetings enhances the students’ understanding of MIT’s academic expectations. After the initial meetings, students are encouraged to take more responsibility and to lead the group in problem-solving sessions. Each study group meets for a minimum of three hours each week. The meeting time is set by the XL facilitator based on students’ schedules.

A. Perry

Institute-wide Discovery Subjects

SP.245 The Sum of All Courses (New)
Prereq: None
U (Fall)
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 9-unit discovery-focused credit limit for first year students. Limited to 1132; preference to first-year students.

C. Carter
SP.246 The Future: Global Challenges and Questions (STS.100)
Prereq: None
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 9-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 (New)
Subject meets with SP.247A
Prereq: None
U (Spring)
1-0-2 units
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 9-unit discovery-focused credit limit for first year students.
S. A. Clarke, M. Jonas

SP.247A Exploring Majors at the Intersection of Engineering, Life Sciences, and Medicine (New)
Subject meets with SP.247
Prereq: None
U (Spring)
1-0-0 units
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. Subject can count toward the 9-unit discovery-focused credit limit for first year students.
S. A. Clarke, M. Jonas

SP.248 Discover the Magic of Project-Based Engineering: NEET! (New)
Prereq: None
U (Spring; partial term)
1-0-0 units
Introduces students to hands-on, project-based learning in interdisciplinary engineering education via five <em>Threads</em> spanning Courses 1, 2, 3, 6, 10, 11, 16, 20, and 22: Advanced Materials Machines, Autonomous Machines, Digital Cities, Living Machines, and Renewable Energy Machines. Provides an overview of NEET (New Engineering Education Transformation), a three year program beginning sophomore year, which seeks to engage students in project-centric learning through making and discovering, as well as practicing distinct ways of thinking, including analytical, creative, critical, ethical and systems-level thinking. Each lecture will focus on one of the five threads, and will consist of a faculty-student-led presentation and a visit to the thread's active lab space to participate in a hands-on learning experience. Subject can count toward the 9-unit discovery-focused credit limit for first-year students.
M. Bathe, B. Mitra
**SP.250 Transforming Good Intentions into Good Outcomes (New)**
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 9-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 (New)**
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 9-unit discovery-focused credit limit for first-year students. Limited to 25; preference to first-year students.

*K. Zolot*

**SP.252 Careers in Medicine (New)**
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 9-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 (New)**
Prereq: None
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 imposter 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 9-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 (New)**
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 9-unit discovery-focused credit limit for first-year students.

*B. Hager, A. Danielson*

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**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*

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**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*

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**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*

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**Terrascope**

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**First-Year/Alumni Summer Internship Program**

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**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*