Welcome to Core Blitz!
Key takeaways:

• Explore. Try new things!

• Worrying about belonging and/or feeling overwhelmed is normal at this stage. It takes time to adapt to MIT.

• There are abundant resources here. They are for you. Ask for help!
Agenda for today

• The core curriculum (GIRs) from 30,000 feet
• Some advice
• Student perspective: Jack Gordon, a senior in Course 6-3
• Q + A
Navigating your choices

Orientation app helps you:

• Understand core requirements
• Browse exploratory classes
• Find academic and other resources
• And much, much more!
MIT is like...
Or this...

MIT HYPERLOOP
FIRST EVER HYPERLOOP RUN IN VACUUM
You are joining a unique academic community.

However, with this privilege comes responsibility.

The handbook can help guide you, with concrete examples and resources.

Online: integrity.mit.edu
Quick poll

• How many of you came to MIT for its exceptional educational opportunities in the humanities, arts, and social sciences?

• One of the most important things you will learn to do at MIT is to think in **MULTIPLE DIMENSIONS** about very complex problems
Eight subjects:

• 3 in a Distribution (1 Humanities, 1 Arts, 1 Social Sciences)

• 3-4 in a Concentration

• 1-2 Elective
Where to start? Pick any HASS subject – it will count toward the requirement!

- **Humanities (HASS-H)**: Interpret human achievements, problems, and historical changes through close analysis of texts and ideas.

- **Arts (HASS-A)**: Create representations through skilled craft and practice focusing on expressive and aesthetic techniques.

- **Social Sciences (HASS-S)**: Engage in theory-driven and empirical exploration and analysis to seek generalizable interpretations of human interaction.
You can discuss the Meaning of Life (21A.157) for credit ...
... Or People & Other Animals (21H.380 / 21A411 / 21H.980) ...
Or just about any topic.

Broad range of great HASS classes, such as:

• Food, Culture, and Politics
• The Vikings
• Videogame Theory
• Jazz
• The Supernatural in Music, Literature, and Culture
Communication Requirement

• Communication matters

• Don’t think of it as a requirement, think of it as an opportunity

• The only way to share your ideas with the world and make an impact!

• Many HASS classes fulfill the requirement

• One per year; two in HASS (CI-H), two in major (CI-M)
Change in abilities at MIT (senior survey)

- Thinking analytically and logically
- Understanding and using quantitative reasoning and methods
- Thinking critically
- Ability to learn on your own
- In-depth knowledge of a field or discipline
- Understanding the process of science and experimentation
- Planning and executing complex projects
- Ability to use the techniques, skills, and modern tools...
- Career- or work-related knowledge and skills
- Creating original ideas and solutions
- Functioning effectively as a member of a team
- Conducting scholarly research
- Judging the merits of arguments based on their sources, ...
- Evaluating the role of science and technology in society
- Relating well to people of different races, nations, and religions
- Leadership skills
- Understanding the complexity of social problems
- Acquiring broad knowledge across a number of fields
- Developing global awareness
- Communicating well orally
- Developing self-esteem/self-confidence
- Developing or clarifying a personal code of values or ethics
- Constructively resolving interpersonal conflicts
- Placing current problems in historical/cultural/philosophical ...
- Writing clearly and effectively
- Critical appreciation of art, music, literature, and drama
- Reading or speaking a foreign language

Critical thinking, problem solving, learning on your own, in-depth knowledge of field, teamwork, creativity, research, etc.

Oral and written communications

- Very much
- Quite a bit
- Some
- Very little or none
Science Requirements

Science core consists of:
- Physics (Course 8), I & II
- Math (Course 18), I & II
- Chemistry: (Course 5; also 3.091)
- Biology (Course 7)
First Year Physics

Students with less preparation

8.01L  Same material as 8.01 with more gradual learning curve
8.01   Standard version in Technology Enabled Active Learning (TEAL) format
8.012  More in-depth, harder problems
8.02   Integral formulation in TEAL format
8.022  Differential and integral formulation

Students with more preparation

Classical Mechanics

Electricity & Magnetism
Math Diagnostic Exam

Tool to evaluate math preparation and offer guidelines regarding which physics class fits students best.

Three scores determined from distribution:

• **Low:** If below this, 8.01L is strongly recommended.

• **High:** If above this, 8.012 is allowed.

• **Very high:** If above this, 8.012 is recommended.
CORRELATION BETWEEN SCORE ON MATH DIAGNOSTIC EXAM AND PERFORMANCE IN FRESHMAN MECHANICS

Probability of not passing, or dropping out of, 8.01 for scores in indicated range

<table>
<thead>
<tr>
<th>Score</th>
<th>Probability</th>
</tr>
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<tbody>
<tr>
<td>2%</td>
<td></td>
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<tr>
<td>10%</td>
<td></td>
</tr>
<tr>
<td>17%</td>
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<tr>
<td>36%</td>
<td></td>
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<tr>
<td>52%</td>
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</tbody>
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MDE Score

Averages for students passing and not passing different versions of freshman physics

- < 8.012, PASS >
- < 8.01, PASS >
- < 8.01, DNP OR LEFT >
- < 8.01L, PASS >
- < 8.01L, DNP OR LEFT >
Math GIRs

- **18.01: Single-variable calculus**

- **18.02: Multi-variable calculus**

- **INTERMEDIATE OPTION: 18.01A + 18.02A**
  - 18.01A: 6-week review of single-variable calculus
    Focus on material not covered in Calc AB
    Finishes in middle of fall term
  
  - 18.02A: Normal speed 18.02, runs through IAP

- Entry requirement for 18.01A:
  5 on A/B portion of AP exam
  or pass first half of 18.01 ASE during Orientation
  (happening now)
Chemistry

Three Subject Options:

5.111 Principles of Chemical Science
5.112 Principles of Chemical Science
3.091 Introduction to Solid State Chemistry

• All three subjects cover significant material beyond AP chemistry (see link in guide!)
• Chemistry ASE is offered for students with an extensive chemistry background
• 5.111 or 5.112 Important for Pre-Health majors
3 Fall Subject Options:
• 7.012: (Lottery for admission): Genomics, cancer
• 7.015: small course, module-based learning focused on specific topics of interest
• 7.016: Chemical biology, developmental biology

2 Spring Subject Options:
• 7.013: Human disease, development
• 7.014: Ecology, biosphere

Important to take early for those interested in pursuing a life science major
### Science GIR: Do’s and Don’t’s

As you weigh your options…

<table>
<thead>
<tr>
<th>Do</th>
<th>Don’t</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consider taking exploratory subjects to consider different majors</td>
<td>Try to get all your GIRs done during your 1st semester</td>
</tr>
<tr>
<td>Pay attention to pre-requisites for majors you are considering</td>
<td>Decide in a vacuum! Ask for help from OLs, Advisors, and Associate Advisors</td>
</tr>
</tbody>
</table>
Typical major pre-reqs

SOE: requires 18.03 for everyone so need to complete 18.01/18.02 or take 18.02 as a co-req. Several Course 6 classes have required 8.02 as co-req or prereq. The other Engineering Departments are very similar with either Physics or Math required as a base, and sometimes the Chemistry GIR.

SOS: the departments that have the GIRs require their majors to complete their specific classes as pre-reqs to their courses., i.e. must finish the 8.01/8.02 series to move further along in Physics.
Typical major pre-reqs

**SHASS, Sloan, SA+P:** Pre-reqs depend upon the specific area a student might be studying. An example would be someone studying Philosophy of Mathematics would have to have completed the Math GIR to take the next level of Classes.

**A comprehensive list of major pre-reqs and co-reqs will be coming to the Orientation Guide soon...**
Exploratory classes

1.007 : Big Engineering: Small Solutions with a Large Impact,
1.000 : Computer Programming for Engineering App, co-req is 18.03
3.001 Introduction to Materials Science and Engineering
4.021, Introduction to Architecture Design
5.12 Organic Chemistry I, pre-req is Chemistry GIR,
5.60 Thermodynamics & Kinetics, pre-reqs are Chem GIR & Calculus II,
Course 6 https://www.eecs.mit.edu/docs/ug/freshman_subjects.pdf
7.02 Introduction to Experimental Biology and Communication
7.03 Genetics, prereq Biology GIR
8.033 Relativity; pre-reqs are 8.02 and 18.02
7.02 Introduction to Experimental Biology and Communication
7.03 Genetics, prereq Biology GIR
8.21 Physics of Energy; pre-reqs are Physics/Math/GIRs
8.282 Intro to Astronomy; pre-req is Physics I
10.10 Intro to Chemical Engineering - Prereq: Chem, Calc1, and Phys1
11.002 Making Public Policy
11.003 Methods of Policy Analysis
11.004 Past, Present, and Future of the Environment and Integration with Society
12.002 Introduction to Geophysics and Planetary Science, prereq Physics II & Calculus II
14.46 Innovation Policy and the Economy
15.037 Energy Economics and Policy
17.263 Electoral Politics, Public Opinion and Decision Making
18.100 (Real Analysis - any "flavor": A, B, P, or Q) - Pure Math, Calc II
18.200 (Prin of Discrete Applied Math) - Applied Math, Calc II + 18.06
18.600 (Probability and Random Variables) - Prob & Statistics, Calc II
20.001 Introduction to Professional Success and Leadership in Biological Engineering
21A.00 - Introduction to Anthropology: Comparing Human Cultures
21G: https://mitgsl.mit.edu/
21H.001 - How to Stage A Revolution
21H.108 Sexual and Gender Identities
21H.157 - The Making of Modern South Asia
21L.004, aka "Reading Poetry" (two sections)
21L.011, aka "The Film Experience (lecture/recitation model)
21M.01 Introduction to Western Music
21M.226 Jazz
21W.755 Short Stories
21W.750 Genre Fiction
22.01 (Introduction to Nuclear Engineering and Ionizing Radiation)
22.011 (Seminar in Nuclear Science and Engineering)
24.01 Classics of Western Philosophy
24.02 Moral Problems and the Good Life
CMS.100 Introduction to Media Studies
WGS.101
WGS.111 Gender and Media

THERE ARE A LOT! TAKE ADVANTAGE OF THEM!
(see orientation guide)
Quick poll / check-in

How many of you are feeling a little overwhelmed right now?

That’s okay. It’s normal. Your advisor and the extended advising staff, fellow students, and faculty can help you navigate.
Finding your path is a process
And keep in mind...

- **You** got in to MIT
- First Year can set you up for ANY major
- 45% of freshman add/drop subjects in the first five weeks
- 10% of students switch their major (after declaring)
- 16% double major
- 26% receive at least one minor
Physical Education Requirement

- 4 classes and the swim test
- Try to complete by end of sophomore year
- ICYMI: Pirate Certificate fulfills requirement

MIT offers Pirate Certificates?
A cautionary tale...
MIT’s five schools

- School of Architecture and Planning
- School of Engineering
- School of Humanities, Arts, and Social Sciences
- School of Management
- School of Science
Did you know?

- **LIGO** – School of Science
- **Quantum Computing** – School of Engineering
- **System Dynamics** – MIT Sloan
- **6 Degrees of Separation** - SHASS
- **E-Ink** – School of Architecture and Planning
Major choices

• Standard practice is to choose your major by the end of spring term of your freshman year

• But you have more flexibility than that if you want it!

• Your advisor and UAAP staff are here to help

• We also know (from survey data) that the biggest influencer on major choice is … [anyone?]  

• Your friends
First-year Sophomore standing

Sophomore Standing: based on students completing 25% of their overall degree which largely includes the GIRs and CI-H as well as the credit they may be bringing to the Institute. The decision about sophomore standing is made late November.

• 33% were eligible last year, half elected sophomore standing

• There are pluses and minuses
My most important advice

Get calibrated

It might take one, two, or even three semesters to get used to MIT
Just ask

Vice Chancellor
• My office hours (dates/times will be posted)
• My email: iaw@mit.edu

Primary Resources
• Your Advisor / Associate Advisor
• Global Education and Career Development Center
• UAAP Staff: To make an appointment, write to firstyear-www@mit.edu.
Opportunities to help us help you

• Your advisors will ask you about:
  - your personal objectives for the first year
  - your academic objectives for the first year

• Please think about these (it is important)
• We will collect this info (in aggregate!) to help improve the first year
Jack of all trades, more than a major

6-3 (CS) | Minor in Course 14 (Econ)

Started out in MechE

60% of his courses have been in the humanities

UROP with Urban Metabolism Lab in SA+P

varsity crew

internships at Akamai and at McKensie

Senior

TA for 6.UAT (Oral Communications)

Also concentrating in German

leader in his fraternity and VP of the Inter Fraternity Council
Q & A