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An Unofficial Guide to USESO

by Ben Choi | ben@useso.org

Hello! My name is Ben Choi, and I'm a former member of the US Earth Science Team (at the 11th IESO in France). In response to the lack of support/resources available to me throughout my USESO preparation experience, I'm writing this guide for future reference for US Earth Science Team hopefuls. Keep in mind that these are my opinions and mine alone; they don't necessarily reflect the opinions of the USESO organization as a whole. The guide below is organized into events in the order in which a US student would have to go through them if trying out for the US team (as of September 10, 2019).

National Open Exam

First, every student takes the national open exam sometime in mid-April. You need to be **nominated** by a school teacher using the nomination form, and also **pay the fee** for the exam. This process/fees may fluctuate from year to year; inquiries about registration should be directed to **info@useso.org**.

How to prepare for this:

1. Take these: https://www.nysedregents.org/earthscience/. I'm not sure if future exams will continue to rely so heavily on these, but I've seen past exams literally copy and paste questions from these exams.
2. Read *Earth Science by Tarbuck, Lutgen, Tasa* (described below), or any other introductory Earth science textbook.

It doesn't really matter which order you do these in, just make sure you do both. My honest opinion is that most students who have taken a basic Earth science course at their school can achieve a high score on this exam with relative ease. However, that doesn't mean you should try to game this (i.e. try to prepare the minimum possible amount but still make it) or email me asking what the cutoff is (it varies a lot, so this question makes no sense to ask). Be efficient and strategic in how you study, but don't try to take shortcuts.

USESO Summer Program

Once you've been accepted into the USESO summer training program, you'll want to start digging deeper (no pun intended) with your studying. I've compiled a list of texts I read to prepare below, loosely ordered from most essential to somewhat less essential. In general, the edition you choose doesn't matter. Just pick one that's cheap (or find a pdf online) and read it.

Recommended Texts

Earth Science by Tarbuck, Lutgens, Tasa *(Any Edition).*

A classic introductory Earth science textbook. You can win a gold medal at IESO by memorizing this book cover to cover.

Meteorology Today by Ahrens

Fairly in-depth text on atmospheric science that builds on content from introductory texts. A lot of the details are overkill, but high-level concepts are important.

Essentials of Oceanography by Trujillo, Thurman

Well-organized text on oceanography. Feel free to skip the biology-related parts of this text and focus mainly on the chapters related to physical oceanography.

Foundations of Astronomy by Seeds, Backman

A decent textbook on Astronomy with sometimes helpful figures/images. A key thing to note about the IESO is that although it does have astronomy-related questions, it is ONLY solar system astronomy. That means you don't have to bother learning about stellar evolution and globular clusters and whatnot (although I think that stuff is pretty cool so feel free to learn about it anyway). I would focus on comparative planetology and basic astrophysics (e.g. Kepler's laws, Stefan-Boltzmann, synodic/sidereal, etc.).

Extraneous Texts
Although I read the texts below, I didn't find them to be particularly helpful for the purposes of IESO, but feel free to check them out if you want to solidify/supplement the above.

Fundamental Astronomy by Karttunen, Kroger
Essentials of Geology by Tarbuck, Lutgens
Universe by Freedman, Kaufmann III
Geosystems by Christopherson

In addition to the above, you'll also want to learn rock/mineral ID (talk to your Earth science teacher about getting some rock/mineral kits, go to your local university's geology department, the local mineral/gem society, or just Google a lot).

At Camp

Once you're at camp, the fun begins! Get ready for an incredibly exhausting, but extremely rewarding week with two kind-hearted, quirky people (The Tailers). Here are my three biggest tips:

1. Pay attention to lectures. Sometimes content ends up in daily exams, so you want to be attentive. Also, believe it or not, the lectures are sometimes interesting.
2. Don't be an a**hole. I cannot stress this one enough. The team selection committee pays close attention to who is actually a team player and who is just trying to do everything for themselves and take all the credit. Listen to your teammates, try to participate with actual insights and not just for the sake of participating, and try to chill out a little. The US team is composed of people who have demonstrated intelligence, genuineness, and compassion, not fake people who try to game the system and step on others for their own self gain. Strive to be your best self everyday, even when things are stressful and the competition is fierce. Good things will happen.
3. Have fun! This is super cliche, but try to actually do this. The majority of people at camp are not only smart and accomplished, but also just really fun and cool people to be around. Don't be that guy or girl who talks to no one and just goes into their dorm every night to be boring and study.

IESO

If you make it this far, myself/some other volunteers will be in touch to try and help you prepare. Congrats.

Closing Remarks

If you have any questions, feel free to find me on Facebook and message me, or email me at **ben@useso.org**. I'll try to help you as much as I can.

Finally, I hope this guide has been at least somewhat helpful to some of you. It may seem overwhelming, but I can assure you, the toil is well worth it. IESO was one of the most rewarding experiences of my entire life, and it's taught me things not only about the Earth, but also myself that I couldn't have learned anywhere else.

Go for it! I believe in you :)

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FAQ

1. Is there a cutoff for making camp?

   Read “National Open Exam” again.

2. Can you suggest more online resources/lectures/texts?

   http://www.tulane.edu/~sanelson/eens212/

   https://ocw.mit.edu/courses/earth-atmospheric-and-planetary-sciences/12-001-introduction-to-geology-fall-2013/lecture-notes-and-slides/

3. Where can I find more practice tests for the open exam?

   As of today, https://www.nysedregents.org/earthscience/ is basically what you’re looking for.

4. Where can I find more practice tests for the camp exams?

   Email me.

5. How does the difficulty of camp exams compare to the international exams?

   Generally significantly harder. International exam difficulty varies a ton though so it’s hard to say.

6. Is IESO easier than other olympiads?

   Yeah probably. Getting there is the hard part.

7. I have a question not listed here.

   Don’t be afraid to reach out! But check https://www.useso.org/resources/faq/ first.