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An Unofficial Guide to IESO USA

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Hello! My name is Ben Choi, and I am a former member of Team USA (at the 11th IESO in France). I've learned a ton throughout my IESO journey, so I'm writing this guide for future reference for IESO Team USA hopefuls. To make it look like I at least somewhat know what I'm talking about, here are some credentials: I was #1 from the USA in the individual competition (silver medal), and won a gold medal in the ITFI. Fancy! However, as any veteran of the IESO knows, the primary purpose of the olympiad is to foster team skills and cooperation, not to beat everyone else on exams. That's why in addition to the individual olympiad, there's not just one, but TWO team challenges at the international event, where students have to communicate with people from all around the world to complete their research projects. Anyway, 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 Team USA (as of January 17, 2018).

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, since it's not free to make, print, and send thick packets of exam materials across the country.

How do I prepare for this you ask? In my complete honest opinion, most students who have taken a basic Earth science course at their school should be mostly fine on this exam. However, if you haven't taken an Earth science course in your life, or are just worried, I recommend reading:

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

Reading this cover to cover (looking at the diagrams is extra helpful) should be well more than enough to get you into the summer training program (as of January 17, 2018). Don't sweat this part too much.

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 does NOT matter. Just pick one that's cheap (or find a sketchy pdf online) and read it.

Earth Science by Tarbuck, Lutgens, Tasa

Same text as above—knowing this book like the back of your hand will come in super handy!

Meteorology Today by Ahrens
Knowing things about the atmosphere is super critical for the IESO. This will build on concepts learned in Tarbuck to much greater depth.

Essentials of Oceanography by Trujillo, Thurman
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 key thing to note about the IESO is that although it does have astronomy-related questions on the olympiad, 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, 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.

Essentials of Geology by Tarbuck, Lutgens
Universe by Freedman, Kaufmann III
Geosystems by Christopherson
Astronomy Today by Chaisson, McMillan

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, 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 incredibly wonderful, kind, and quirky people (The Tailers!). Here are my three biggest tips:

1. Pay attention to lectures. Even if you think you know everything already, at least some portion of the content on daily exams comes from information given in these lectures, so you'll want to be attentive. Also Tom/guest lecturers are just brilliant people in general, so you don't want to miss out on this rare opportunity.

2. Don't be an asshole. The team selection committee pays 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. Team USA 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 super smart/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

So you made Team USA. Congratulations! This is truly an incredible and impressive feat. Chances are, you are itching to work even harder to prepare for the international stage. Unfortunately, preparing for the IESO is extremely difficult, as the exam content, format, and style vary widely from year to year. However, I recommend the following. In addition to reviewing all the above texts (including the extraneous ones) and filling in as many holes as you can, I recommend heading over to the IESO website to take some past IESOs as practice. You'll find that many of the links are broken, answer keys are missing/poorly formatted, and language errors are abound, but do your best to get as much practice as you can with these.

Although this trend may be obsolete in future years, I've found that IESOs occurring on the Asian continent tend to have more recall/calculation based questions (e.g. What is the chemical formula of chalcopyrite/Calculate the sidereal period of this planet), while IESOs occurring in Europe/South America tend to take more of a practical, skills-based approach (e.g. Using this geologic map, answer some questions about a hypothetical fault zone at Site A). I think in general though, the IESO committee is trying to move away from pure recall towards the skill-based questions, so memorizing terms and formulas rather than practicing applying overarching concepts is probably a poor idea.

If you have any questions, feel free to find me on Facebook and message me. 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 :)