Project 1: Getting to Know Your Groups; Orientation and Navigation

*(You will learn how to fill this out and submit it a little later!)*

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| --- | --- | --- | --- |
| **Group Number and Name:** | |  | |
| **Member Name #1:** |  | **Email #1:** |  |
| **Member Name #2:** |  | **Email #2:** |  |
| **Member Name #3:** |  | **Email #3:** |  |
| **Collaboration Time and Date:** |  | **Evaluating Group Number:** |  |
| **Collaboration Methods (in-person, Zoom, etc.)** |  | | |

*This project has two parts. For the first part, you will get to know your groups and decide how you want to work together this semester. For the second part, you will figure out a few basic things about the night sky. This is something of a “trial run” for our group work system, so please ask for help on Piazza if you have questions! Coaches will be watching this all week to help you. We can also jump on Blackboard Collaborate or Zoom if you need help in real time.*

You will be doing much of your work in groups this semester. Some of you will be meeting in person; some of you will be working online. Regardless, you will be working closely together. (Remember, if you’re meeting in person, wear masks and be safe!)

In some classes, group work is only a little thing -- only a small fraction of the course, and only a small fraction of your grade. This semester, it will be almost *all* of your work and most of your grade. The other two people you’ll be with are going to be your close colleagues for the next few months -- and, hopefully, your friends throughout your university career.

You will also be suggesting grades for the other members of your group, too. So, it is important that we make sure that we start off right: we want to make sure that your groups work as well as possible together.

After you have figured out how to work with your groups, you’ll start gaining the basic vocabulary you need to talk about where things are in the sky.

The first thing you will want to do is to upload this document into either Microsoft Office365 or Google Docs. Make the document shareable to “anyone with the link”, and share the link with your group. It is important that the document be accessible to “anyone with the link” because we will need to see it eventually, too!

**Part 1: Building Your Groups**

Take turns introducing yourself to the other people in your group and get to know them. Each person should share with the group:

* Your name and preferred pronouns
* Where you’re physically located in the world; if you’re in Syracuse, share where you’re from
* Why you enrolled in AST101 and what you hope to get out of this class
* What you’re studying here at Syracuse
* How you hope to make the world a better place, both as a student and afterwards in the rest of your life

While the first person is introducing themselves, the second person should type out a summary of what they said below. (This is good for us to have for our records.)

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Then, while the second person is introducing themselves, the third person in the group should likewise type a summary below:

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Finally, as the third person introduces *themselves*, the *first* person in the group should likewise type a summary below:

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| --- |
|  |

Now, discuss with your group how you hope to work together during the semester. As a team, complete the following:

“*A good group member will…”*

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“*The most important thing a group member can do is…”*

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“*It’s not a big deal if a group member…”*

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“*It would really hurt the rest of us if a group member did…”*

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“*Some good ways for us to collaborate together in real time are…”*

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(Some examples: Meeting in person; Zoom; Discord; WeChat; Google Hangouts; FaceTime…)

Talk about the technology you prefer and figure out what works for everyone. You should choose one of Office365 and Google Docs to use for realtime collaboration -- this will be very important. We have tried to pair people who have similar preferences.

Then, use your previous answers to create a **rubric** (a grading method) for your group. I will look at all the rubrics that the class creates, and then combine your good ideas to make a rubric for the class. During the semester, I’ll have you grade the other members of your group with it -- so, in part, your grade will be coming from the other members of your group.

In creating your rubric, tell us both what things you will evaluate, and what percentage of the credit they should be worth. (So, for instance, you might say that “showing up” is worth 20%. I’ve typed this into the table, but you can and should change it if you want!)

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| --- | --- |
| **Criterion** | **Percentage** |
| Being present when the group is working | 20% |
|  |  |
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Your first homework assignment is due *Tuesday, September 8, by noon Syracuse time.* Like everything else, you’ll work on this homework assignment in your groups! It will be ideal if you work on this assignment together in person. However, if you are not able to meet in person, you can meet over the internet. Having webcams and/or the ability to share your screens with each other will be very helpful for you for this.

Discuss with your team when and how you’re going to meet up to do your homework (e.g. “2PM on Sunday, using FaceTime”; “10PM on Monday, by the big rock in Oakwood“):

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Finally, you should start thinking about a group name! Since this is an astronomy class, the best group names are astronomy-themed -- stars, planets, spacecraft, and the like! You don’t have to choose one right away; if you don’t think of one right away, you’ll have another opportunity to ponder this. (Group names help us keep things organized and are more fun than the “group numbers” that you’ve been given already.)

**Part 2A: Orienting Yourself By the Sky**

Shortly after the attack on Pearl Harbor that marked the US entry into the Second World War, the Japanese invaded the island of Luzon, the northernmost island in the Philippines and the site of its capital. American troops were surrounded on the Bataan Peninsula near Manila, and they knew that they would soon have to surrender. The Americans decided to use the last remaining forces of the US Navy in the area to evacuate the President of the Phillippines, along with General Douglas MacArthur and his top staff, to safety on the southern island of Mindanao.

But the Navy didn’t have any large ships left – only a few wooden speedboats, called “PT boats”, led by Lt. John Bulkeley. They were small and fast, but would not be able to fight the Japanese Navy. The only option was to escape at night, sneaking past the blockade into the open ocean and running for it. Their voyage took a day and a half, and during much of this time they had to navigate by the stars. (They were planning to arrive at Cayagan at nighttime, but engine trouble slowed them down.) They would have access to *sextants*, devices to allow them to measure angles. Using a sextant, you can measure the angle between a star and the horizon, between a star and the direction your boat is pointed, or anything else. They also would have had wristwatches, allowing them to tell time accurately.

Their escape route is shown on the map at [https://upload.wikimedia.org/wikipedia/commons/a/ad/MacArthur%27s\_Escape.jpg](https://upload.wikimedia.org/wikipedia/commons/a/ad/MacArthur's_Escape.jpg) . They travelled from Corregidor Island (latitude 14.4 degrees N, longitude 120.5 degrees E) to Cayagan (latitude 8.5 degrees N, longitude 124.7 degrees E) – in other words, they needed to travel mostly south and a little bit east.

Describe how this small group of sailors could use the stars to find Cayagan in the dark. You will need to be able to:

* Point your boat in a direction that you choose, using your sextant and knowledge of the night sky. (Remember, you want to travel mostly southeast. Where will landmarks in the sky be compared to the direction you want to go?)
* Measure your current latitude from looking at the night sky, so you know when you have traveled far enough

Now, suppose that Lt. Bulkeley had to travel all the way to Australia by sea – to Darwin, at latitude 12.4 degrees S, longitude 130.9 degrees N. Would he have had to do anything different in navigating all the way to Australia? (Hint: What changes when you cross the Equator?)

Remember, your task isn’t just to describe *how* to do those things – you need to describe *why* those are the right things to do. Type your explanation in red type below. If you want to include pictures or anything else, you may do so!

*When your group is done, one person should send a link to your shared Google or Microsoft document by email to* [*suast101projects@gmail.com*](mailto:suast101projects@gmail.com)*.You should cc: both your other group members and the group members of the group that will evaluate you. This means that ordinarily you will be emailing six different addresses:* [*suast101projects@gmail.com*](mailto:suast101projects@gmail.com)*, the other two members of your group, and three members of another group. (Of course, if one of those groups has only two people, then this will be different.)*

*See* [*https://walterfreeman.github.io/ast101/project1instructions.html*](https://walterfreeman.github.io/ast101/project1instructions.html) *to see what group is evaluating you, what to put in the subject line of your email, what their email addresses are, and what their group number is.*

*Make sure you fill out the information at the top about who you worked with and how you worked together.*