

COIL Course/Module name

Data Collection and Analysis on Physics & Biology Research

Local Course Names

Ohio University Zanesville - Special Topics in Physics- Design of Research Projects

Universidad Veracruzana - Design of Research Projects

COURSE DESCRIPTION

During this module, you will improve your communication skills with a person not only from another culture but also having different native language. Undergraduate students from Ohio University are mainly first or second year students, while students from the Universidad Veracruzana are seniors biology majors. The topic for this module will be the process of collecting data in Physics and Biology. The purpose of the work is to find what is similar and what is different in the process of collecting data in both disciplines. By collaborating on each other projects, you will prepare better presentation of the research proposals having to work with somebody from a different discipline (physics and biology). Finally, you will develop a protocol of scientific project, showing it in a scientific poster with an oral presentation. You will communicate synchronously and asynchronously with each other by using various media. This way, you will learn what is accepted in each other culture. You will also learn about different education systems, culture, study habits, and work perspectives. During this module you will develop an appreciation for the education in two countries with different cultures and languages.

STUDENT LEARNING OUTCOMES

By the end of this module, you will feel comfortable to work with somebody from a different country, culture, and language on a common project. You will be able to approach a person, exchange ideas, and fulfill a task by the deadline. You will become a better-informed global citizen of the 21st century.

STAGE	WEEK	TASK/ACTIVITY
1. ICE BREAKER	1	Write 3 sentences about yourself. Read the trello cards that the professors have created for you. Write similar sentences, stating your name, the degree you are pursuing at your university and your career goal.
	1	Post a meaningful question to two other students from the other country. (This way, everybody will get two questions)
	1	Post a meaningful question to two other students

		from the other country. (This way, everybody will get two questions)
2. COMPARISON & ANALYSIS	2	Watch the 2 videos posted by the two professors.
	2	Discuss your project with your own professor.
	2	Write a short explanation of your project to the students from the other country.
3. COLLABORATION	3	Read the explanation of the project of the students from the other country.
	3	Connect synchronously with the students from the other country to discuss each other projects for 10 minutes for each of the 2 projects.
	3	Post a description of what data and how are you going to collect to support or reject your hypothesis.
	4	After you read how you collect data in the two disciplines, connect synchronously and brainstorm together to find what is similar and what is different in the process of collecting data in both disciplines.
	4	Write your findings in a word document and post it
	5	Choose with your Trello team, one mexican project and one US project to share with de COIL Physics & Biology group. As a team, make a scientific poster of each project and show it through a video of maximum 4-5 minutes. Each team, post both videos (Mexican and US projects) in Facebook
	5	Individually discuss all projects by commenting on videos in Facebook
	6	In few sentences explain how this experience helped you improve your confidence talking with somebody from a different culture, language, and country.
	6	In few sentences explain how this experience helped you appreciate the education system in a different culture, language, and country.
	6	In few sentences explain how this experience helped you improve your confidence in working on a specific project, together with somebody from a different culture, language, and country.

ATTENDANCE POLICY

This module brings 100 points to your grade for this class. Please check the grade rubric for weekly activities and points. It is very important for everybody to do their part by the deadline in working together with other people. If you do not do your share, somebody else will do, and you will get zero for that part.

ASSESSMENT AND GRADING

Both Physics and biology students will be graded on the quality of the PowerPoint, oral presentation, and description of the project. COIL module will make up 25% of the grade. Assessment for this module consists in the quality of the work in the weekly tasks. The points for each part are posted in the Grade Rubric table.

Ice break activity	Loggin to trello	
	Write three sentences about yourself. Read the trello cards that the professors have created for you. Write similar sentences, stating your name, the degree you are pursuing at your university and your career goal.	2 point
	Post a meaningful question to two other students from the other country. (This way, everybody will get two questions)	2 points
	Answer the two questions you get.	2 points
Interaction on Facebook	On Facebook group, post a photo of where you grew up. In few sentences, comment some information about that place. Comment photos of at least three students	2 points
	On Facebook group, post a photo from your favorite place in your <i>campus</i> . In few sentences, comment some information about that place and tell why is your favorite place. Comment photos of at least three students	2 points
	On Facebook group, post a photo of your favorite food. In few sentences, comment some information about that food. Comment photos of at least three students	2 points
	On Facebook group, share a video of the Mexican song/movie that you like, if you are Mexican, or the American song/movie that you like if you are American. In few sentences, comment some information about that song/movie and tell why is your favorite song. Comment on the video of at least three students	2 points
	On Facebook group, share some information about the education system in your country, what you like and what you don't. Comment on posting of at least three students.	2 points
Project	Discuss your project with your own professor.	5 points
	Find your group on Trello.	
	In your Trello, write a short explanation of your project to the students from the other country.	10 points
	Read the explanation of the project of the students from the other country. Then, connect synchronously by WhattsApp or Facebook with the students from the other country to discuss each other projects for 10 minutes for each of the 2 projects.	5 points
	Post a description of how you are going to collect the data to support or reject your hypothesis.	10 points

	After you read each other description of how you collect data in the two disciplines, connect synchronously and brainstorm together to find what is similar and what is different in the process of collecting data in both disciplines.	10 points
	Write your findings in a word document and post it by the end of the semester.	20 point
Report	Choose with your Trello team, one Mexican project and one US project to share with de COIL Physics & Biology group. As a team, make a scientific poster or ppt. presentation of each project and show it through a video of maximum 4-5 minutes. Each team, post both videos (Mexican and US projects) in Facebook	10 points
	Individually discuss all projects by commenting on videos in Facebook	5 points
Reflection	In few sentences explain how this experience helped you improve your confidence talking with somebody from a different culture, language, and country.	3 points
	In few sentences explain how this experience helped you appreciate the education system in a different culture, language, and country.	3 points
	In few sentences explain how this experience helped you improve your confidence in working on a specific project, together with somebody from a different culture, language, and country.	3 points
Total		100 points

ONLINE ENVIRONMENT(S)

All the tools we will use are free and available on all devices used by students

- Trello will be used to organize the entire course. Here, we give the formal information (ice breaker, documents, video-lessons, assessment, etc.)
- Facebook will be used to will be used to share informal information that contributes to cultural perception. Also, FB will be used to connect synchronously the students from the other country to discuss each other projects.
- Skype, Whatsapp or FaceTime will be used to connect synchronously the students from the other country to discuss each other projects.
- iMovie or Movie Maker will be used to create video classes

RESOURCES

Include information about any resources, e.g. books, articles, online videos, etc., that students will need during the COIL project.

- Alon, U. (2009). How to choose a good scientific problem. *Molecular cell*, 35(6), 726-728.

- Knisely, K (2004). A student Handbook for writing in biology. 2nd ed. Massachusetts: Sinauers Associates, Inc.

CALENDAR

This calendar is subject to change.

Here is a table to serve as an example of the type of information you may want to provide students with at the outset of the COIL project. This table is NOT a fill-in block so feel free to modify to suit your specific needs. Make reference to the activities you completed in Weeks 4 and 5.

WEEK	TOPIC	TOOL	TASK/ACTIVITY Academy part (Formal)	TASK/ACTIVITY Multicultural part (Informal)
1 Feb 20-26/2017	ICE BREAKER: Introduce each other	Trello/ Facebook	Write three sentences about yourself. Read the trello cards that the professors created for you. Write similar sentences, stating your name, the degree you are pursuing at your university and your career goal.	On Facebook group, post a photo of where you grew up. In few sentences, comment some information about that place. Comment on photos of at least three students
1	ICE BREAKER: Curiosity to know each other	Trello	Post a meaningful question to two other students from the other country. (This way, everybody will get two questions)	
1	ICE BREAKER: Sharing information to each other	Trello	Answer the two questions you get.	
2 Feb27- Mar5/2017	Collecting data on Physics and Biology disciplines	Trello/ Facebook	Watch the 2 videos posted by the two professors.	On Facebook group, post a photo from your favorite place in your <i>campus</i> . Share why is this your favorite place. Comment on photos of at least three students
2	The Research Projects	Trello/ Classroom	Discuss your project with your own professor.	
2	The Research Projects	Trello	Find your group on Trello. In your Trello, write a short explanation of your project to the students from the other country.	

3 Mar 6-12/2017	The Research Projects	Trello/ Facebook	Read the explanation of the project of the students from the other country.	On Facebook group, post a photo of your favorite food. Share why you like that food. Comment photos of at least three students
3		Skype/ Facebook/ FaceTime/ Whatsapp	Connect synchronously with the students from the other country to discuss each other projects for 10 minutes for each of the 2 projects.	
3		Trello	Post a description of what data and how are you going to collect to support or reject your hypothesis.	
4 Mar 13-19/2017		Skype/ Facebook/ FaceTime/ Whatsapp	After you read how you collect data in the two disciplines, connect synchronously and brainstorm together to find what is similar and what is different in the process of collecting data in both disciplines.	On Facebook group, share a video of the Mexican song/movie that you like, if you are Mexican or the American song/movie that you like if you are American. In few sentences, comment about that song/movie and tell why is your favorite song. Comment on videos of at least three students
4		Trello/ Word	Write your findings in a word document and post it	
5 Mar 20-26/2017	Oral presentation	Power point/ Photoshop/ iMovie/ Movie maker/ Facebook	Choose with your Trello team, one Mexican project and one US project to share with de COIL Physics & Biology group. As a team, make a scientific poster of each project and show it through a video of maximum 4 minutes. Each team, post both videos (Mexican and US projects) in Facebook	
5	Oral presentation	Facebook	Individually discuss all projects by commenting on videos in Facebook	
6 Mar 27-31/2017	Reflection	Trello	In few sentences explain how this experience helped you improve your confidence talking with somebody from a different	On Facebook group, find similarities and differences between the US and Mexican education systems.

			culture, language, and country.	Comment on posts of at least three students.
6	Reflection	Trello	In few sentences explain how this experience helped you appreciate the education system in a different culture, language, and country.	
6	Reflection	Trello	In few sentences explain how this experience helped you improve your confidence in working on a specific project, together with somebody from a different culture, language, and country.	