

Inquiry in Math & Science

Follow the
Yellow Brick Road

A
journey
between
your
ears



INSTRUCTOR

Dr. Benjamin Brunner

Office: 404A Geology Building

E-mail: bbrunner@utep.edu

Associate Professor, Geological Sciences

Office hours:

preferred appointment via email to bbrunner@utep.edu

presence Tuesday & Thursday 2:00 pm – 3:00 pm, 404ABCDF

Please note Dr. B's Killer Rule:

More than 2 missing/unexcused assignments & you are out!

Make sure you get excused – examples on how to do so are provided on Blackboard



TEACHING ASSISTANT:

Madison Woelfel; E-mail: mcwoelfel@miners.utep.edu

IN A NUTSHELL: Meeting pattern, location, mandatory investments

MEETING PATTERN & LOCATION

Tuesday and Thursday 10:30 am - 11:50 am Geology Building, Room 404, 3 credits
BS students (SCI 1301, CRN 13592)

COURSE DESCRIPTION

In this class explores three themes. The first theme is how to be a professional student. The second theme is how humans interact, and where human interactions find their reflection in scientific procedures. The third theme explores how microbes alter the environment in which they live in. Our journey will lead us from the basics of Earth Science to the cutting edge of research, and touches on themes from Biology, Chemistry, Geology, Math and Physics and show how they all work together.

REQUIRED TEXTBOOK / OTHER INVESTMENTS

No required textbook. There will be handouts & material posted on Blackboard. We may require that you buy from time to time something from store to carry out an experiment but will keep those costs at a minimum.

Grades

20% Quizzes/Exams, 50% Semester Poster, 30% Team Report – Different weighing of grades can be negotiated with instructor. ☺



COURSE OBJECTIVES

- 1) Functioning in an online world as a human being and professional student
 - a. Time sheets and Work schedules
 - b. How do I present myself – virtual, and in real life
 - c. Communication with peers and mentors
 - d. The most powerful person in a meeting
 - e. Applying for scholarships
- 2) Obtaining insight into scientific thinking and working:
 - a. Thinking inside and outside the box
 - b. Taking notes
 - c. Processing notes
 - d. Anticipating results, forming a hypothesis
- 3) Catching a glimpse of Geomicrobiology:
 - a. A geochemical perspective:
 - i. Atoms, elements, molecules, minerals, rocks
 - ii. From past to present – and back
 - iii. From sea to land
 - iv. How comes that a rock dissolves in water?
 - b. A biological perspective:
 - i. Winogradsky – a special Russian cocktail
 - ii. Microbes rock
- 4) Starting your own scientific research
 - a. Earth's rotation over time



**Never
swim
alone!**

YOUR ARE IMPORTANT TO US, AND WE KNOW THAT “SHIT HAPPENS”

Please contact Dr. Brunner about any concerns, schedule conflicts, etc. in advance or otherwise as soon as possible! Valid excuses include illness, absence with the instructor's prior approval, official University business, etc.

Accommodations are possible for active duty military and others, but arrangements must be made in a timely manner. If you are in the military with the potential of being called to military service and/or training during the course of the semester, you are encouraged to contact the instructor as soon as possible.

If you think you may have a *disability or if you are experiencing learning difficulties*, please contact the Center for Accommodations and Support Services (CASS), East Union Bldg, Room 106:

Office: 915-747-5148 / Email: cass@utep.edu / <https://www.utep.edu/student-affairs/cass/>

Course Drop Deadline: Friday, October 29, 2021

The College of Science will not approve any student- or faculty-initiated drop requests for a course after that date, except under circumstances of complete withdrawal of all courses due to medical or non-medical reasons.

Cheating/Plagiarism:

Cheating is unethical and not acceptable. Plagiarism is using information or original wording in a paper without giving credit to the source of that information or wording: it is also not acceptable. Do not submit work under your name that you did not do yourself. You may not submit work for this class that you did for another class. If you are found to be cheating or plagiarizing, you will be subject to disciplinary action, per UTEP catalog policy. Refer to <http://www.utep.edu/dos/acadintg.htm> for further information.

This is important for your Individual Assignments – make sure that they are ‘yours’, even if you work in teams.

SCHEDULE OF TOPICS – *This will likely massively change during semester as we progress!*

Date:	Topic:	Reading & Assignments
Week 1 08/22/22	<ul style="list-style-type: none"> • First impressions • Teacher time commitment to students in classroom 	Syllabus
Week 2 08/29/22	<ul style="list-style-type: none"> • The most basic scientific concept – a box. • The most basic scientific tool – a hypothesis. • Getting the most out of lectures, experiments, and life: taking notes, and be prepared. • Time sheets 	TBD
Week 3 09/05/22	<ul style="list-style-type: none"> • Labor day (09/05/22) week (does not affect our class) • Doing some middle-age geochemistry I • Atoms, elements, molecules, minerals, rocks – and how to search for information about them. 	TBD
Week 4 09/12/22	<ul style="list-style-type: none"> • Doing some middle-age geochemistry II • Atoms, elements, molecules, minerals, rocks – and how to search for information about them. • Our first attempt at a Russian cocktail - Winogradsky 	TBD
Week 5 09/19/22	<ul style="list-style-type: none"> • Our first attempt at a Russian cocktail - Winogradsky 	TBD
Week 6 09/26/22	<ul style="list-style-type: none"> • Using a multi-meter 	TBD
Week 7 10/03/22	<ul style="list-style-type: none"> • pH – who are you? 	TBD
Week 8 10/10/20	<ul style="list-style-type: none"> • Winogradsky – a special Russian cocktail 	TBD
Week 9 10/17/22	<ul style="list-style-type: none"> • Microbes rock I 	TBD
Week 10 10/24/22	<ul style="list-style-type: none"> • Microbes rock II • Friday 10/28/22 Fall Drop/Withdrawal Deadline 	Attention – drop deadline
Week 11 10/31/22	<ul style="list-style-type: none"> • Winogradsky – a special Russian cocktail 	TBD
Week 12 11/07/22	<ul style="list-style-type: none"> • The chase to the cutting edge: Isotopes are sweet 	TBD
Week 13 11/14/22	<ul style="list-style-type: none"> • Burning topics in geomicrobiology & geology 	<i>Hand in reports</i>
Week 14 11/21/22	<ul style="list-style-type: none"> • Burning topics in geomicrobiology & geology • Thu/Fri: Thanksgiving 	Research
Week 15 11/28/22	<ul style="list-style-type: none"> • Review of class / Friday Dec 02, 2022: Dead Day 	Don't Panic!
Week 16 12/05/22	<ul style="list-style-type: none"> • Course review / Friday Dec 03, 2022: Dead Day 	NO EXAM