Math1740: Introduction to Statistics

Spring 2023

Instructor

Dr. Francois Nguyen
Email: Francois.nguyen@saintpaul.edu
Preferred contact: Email or MocroSoft TEAM
Office Hours: Arrange for Zoom meeting
Office: Room 3460
Correspondence policy: Within 24 hours on weekdays; 48 hours on weekends

Class information
Classroom: 4140
Class Hours: 11:15 am - 12:05 pm MW
Lab room: LCSB 337
Lab Hours:

#This code chunk sets up a table of meeting days for the course. #You can set days of the week for course meetings (e.g. Monday and Wednesday). #Semester start and end dates are selected and then university holidays like spring break are specified. tinytex::reinstall_tinytex() #Days of the week that the course meets. Must be full day name in quotes.

Days <- c("Monday", "Wednesday")

#Semester start date for classes as YYYY/M/D. SemesterStart <- as.Date("2022/1/10")

#Semester end date for classes as YYYY/M/D. SemesterEnd <- as.Date("2022/4/29")

#Fall break start and stop date. FallBreak <- seq.Date(from = as.Date("2021/10/7"), to = as.Date("2021/10/10"), by = "day")

#Spring break start and stop date. SpringBreak <- seq.Date(from = as.Date("2022/02/28"), to = as.Date("2022/03/06"), by = "day")

#Creates a list of days within the semester. SemesterDays <- seq.Date(from = SemesterStart, to = SemesterEnd, by = "day")

#Add day before Thanksgiving. DayBeforeThnks<-as.Date(holiday(year = getRmetricsOptions("currentYear"), Holiday = c("USThanksgivingDay")))-1

#Full list of holidays that there are no classes including breaks. Holidays <- c(as.Date(holiday(year = getRmetricsOptions("currentYear"), Holiday = c("USLaborDay", "USThanksgivingDay", "USMLKingsBirthday"))), SpringBreak, FallBreak, DayBeforeThnks)

#Create a list of semester days excluding holidays. SemesterDays <- SemesterDays[!SemesterDays %in% Holidays]

#Make dataframe with all semester days. ClassDays <- data.frame(index = 1:length(SemesterDays))

#Insert dates. ClassDays$Date <- SemesterDays

#Insert weekday designation. ClassDays$Weekday <- weekdays(ClassDays$Date)

#Limit to the class meeting days. MeetingDays <- ClassDays[ClassDays$Weekday %in% Days,]

#Create numeric list of weeks. Week <- cut.Date(MeetingDays$Date, breaks = "week") levels(Week) <- 1:length(levels(We

MeetingDays$Week < -WeekMeetingDays$Class <- 1:nrow(MeetingDays)

#Replace this with c("Lecture topic 1",. . . ,"Lecture topic N") to fill in table.

Lecture_Topic <- 1:nrow(MeetingDays)

MeetingDays <- bind_cols(MeetingDays, Lecture = Lecture_Topic)

Grade table Grades <- tribble(~ Grade, ~ Range, "A", "90-100", "B", "80-89", "C", "70-79", "D", "60-69", "F", "< 60")

####Assignment weight table#### Weights <- tribble(~ Item, ~ Weight, "Writing scaffolding", "20 %", "Semester Project", "25 %", "Labratory Assignments", "20 %", "Midterm Exam", "15 %", "Final Exam", "20 %")

"'

Course description

Why does Sedimentology (GY306[W]) matter? Sediments house the record of climate at Earth's surface, influence climate through feedbacks, and house important resources. In this course you will learn how sediments are formed, moved, and preserved in the rock record. We will discuss the way that paleoenvironments are interpreted from observations of rocks on multiple scales. In addition, we will work together to improve your writing skills with a focus on the genres of writing you may be expected to do as professional geologists.

Writing requirements

For this class to fulfill the (W) requirements of USA, you will be doing a semester-long research project in an area related to sedimentology. To build your skills in discipline-specific writing, we will be doing smaller writing assignments throughout the semester. The final projects will be peer-reviewed, revised, and then submitted for final grading and assessment.

Important Dates

January 17th - Last day to drop without WD
April 1st - Last day to drop or withdraw
See the Academic Calendar for more information.

Course goals

1. Observe, describe, classify, and communicate characteristics of sediments and sedimentary rocks.
2. Develop a framework for building hypotheses about the distributions of sediments, sedimentary structures, and sedimentary environments.
3. Communicate sedimentary geology to a variety of audiences using different genres of writing.
4. Read and summarize scientific papers focused on sedimentary geology and related fields.

Class textbooks

There is no required textbook for this fall, however I recommend getting these books from the library or used versions to compliment the lectures. Without a required textbook I will also be assigning technical papers to read throughout the semester. We will discuss these and you will build your technical reading skills along with your writing skills.

For general Sedimentology and Stratigraphy

Gary Nichols, **Sedimentology and Stratigraphy**, 2nd edition, Wiley-Blackwell, ISBN: 978-1-405-13592-4

Field focused rock ID

Dorrik A.V. Stow, **Sedimentary Rocks in the Field: A Colour Guide**, Manson Publishing Ltd, ISBN 10: 1874545693

Improve the mechanics of your writing

William Strunk JR. and E.B. White, **The Elements of Style**, ISBN: 1594200696

Lectures and papers

Both lecture slides and papers will be available via Canvas. Slides will be posted after lectures and assigned papers will be available in Canvas.

Student conduct

Attendance policy

- Students who complete less than 50% of assignments/exams will be assigned a failing (F) grade.
- Review the 'Attendance and Absences Policy', in the Undergraduate and Graduate Bulletin for attendance and absences policy

Grading

Late policy

I will be grading assignments in batches to provide fair assessment to everyone. This means late work can be disruptive. The penalty for late work will be 20% a day after the first 24 hours late. If you have a reasonable excuse (illness, etc.) the late policy may be relaxed.

Extra credit

Extra credit may be made available throughout the semester at my discretion.

Assignments will be returned within a week of submission.

	mpg	cyl	disp	hp
Mazda RX4	21.0	6	160	110
Mazda RX4 Wag	21.0	6	160	110
Datsun 710	22.8	4	108	93
Hornet 4 Drive	21.4	6	258	110
Hornet Sportabout	18.7	8	360	175
Valiant	18.1	6	225	105

Assignment weighting will follow:

	mpg	cyl	disp	hp
Mazda RX4	21.0	6	160	110
Mazda RX4 Wag	21.0	6	160	110
Datsun 710	22.8	4	108	93
Hornet 4 Drive	21.4	6	258	110
Hornet Sportabout	18.7	8	360	175
Valiant	18.1	6	225	105

Writing tasks

Scaffolding tasks

Scaffolding writing tasks assigned to give you some practice and general feedback to improve your writing. ### Abstract 1

First attempt at writing an abstract using the Nature paragraph template.

Figure Caption

Write the figure captions for several example figures using some literature examples. Learn to describe figures in text.

Abstract 2

Write the abstract for a second paper using the feedback from the first abstract to improve your process.

Peer Review

Peer review of preprint or publication using example template. The goal of this assignment is to focus on critiquing the logic put forward in the paper with suggestions for refining it.

Semester project

Semester project outline of writing products.

Project abstract

Short outline of full project highlighting the hypotheses to test, data to collect, and impact of the project. This includes no figures but could include a small table for organizing hypotheses.

Project first draft

Full proposal draft with figures. The important aspect of this submission is assessment of the research plan and justification.

Project peer review

Review of a peer's proposal with the goal of improving the work by increasing clarity, readability and communication.

Project final draft

Full, final project proposal with figures, time line and clear plan for work. Focus is on clearly communicating to your peers that the work is worth doing and that you can do it.

Project presentation

Presentation of a peer's research proposal with a focus on justifying funding their project. The goal is to convince the audience that the project can be done and will have an important impact on society.

Academic disruption policy

The University of South Alabama's policy regarding Academic Disruption is found in The Lowdown, the student handbook. http://www.southalabama.edu/lowdown/academicdisruption.shtml. Disruptive academic behavior is defined as individual or group conduct that interrupts or interferes with any educational activity or environment, infringes upon the rights and privileges of others, results in or threatens the destruction of property and/or is otherwise prejudicial to the maintenance of order in an academic environment. At all times students will be cordial, courteous and respectful of faculty members and fellow students. Cell phones, videotaping, and other electronic devices are not allowed; however, you may use a laptop for note taking. If your laptop is used for other purposes, the instructor holds the right to revoke laptop use.

Academic honesty

The University of South Alabama's policy regarding Student Academic Conduct Policy is found in The Lowdown http://www.southalabama.edu/lowdown/academicconductpolicy.shtml: The University of South Alabama is a community of scholars in which the ideals of freedom of inquiry, freedom of thought, freedom of expression, and freedom of the individual are sustained. The University is committed to supporting the exercise of any right guaranteed to individuals by the Constitution and the Code of Alabama and to educating students relative to their responsibilities.

Violation of academic conduct policy may result in receiving 0 credit for the affected exam/assignment.

Do not pass others work off as your own. This constitutes plagiarism and seriously undermines your education. Students may learn about the meaning of plagiarism and how to avoid it at the following link: http://www.southalabama.edu/univlib/instruction/plagiarismforstudents.html

Course and Teacher evaluation

Student input for the purpose of course improvement is taken very seriously and will potentially be done periodically. Please take the time to evaluate this course and the instructor, especially at the end of the semester. Evaluations will in no way affect your grade.

Safety

Field Safety

Transportation

Wear your seatbelts at all times while in moving vehicles. Do not distract the driver.

Location awareness

Be aware of potential dangers (animals, weather, etc) and avoid them. When in a group, please think about the safety of your peers.

Building Safety

Fire

Random fire safety drills may occur during the course of the term. You will be expected to evacuate the building and assemble at the designated location: outside by the northeast corner of the building (follow your instructor).

Tornado

Move away from external windows to the hallway in the basement, first, or second floor.

Active Shooter Incident

"Get Out" of the building as long as they can do so safely. Once you have exited the building and are at a safe location, "Call Out" to law enforcement using 911, USA Police at 460-6312, or press the Emergency button on your LiveSafe Mobile Safety App. If you can't get out, "Shelter in Place" in a secure location that is away from windows and doors, preferably a location that can be locked and barricaded.

On writing

Revising written work

Nothing is perfect on the first draft. We all revise and rework our written creations for a variety of reasons. We may not communicate the point we want to get across to all readers. We may have forgotten or not known important pieces of information initially. The tone of the writing may be inappropriate for the audience. Word choice might obscure meaning. The only way we can make our writing better is by revising it based on constructive feedback from others or ourselves.

Genres of Science writing

Paper reviews

Critical but constructive critique of unpublished research papers. Informs the journal editor of how the work contributes to existing literature and provides guide to authors and the editor for improvement to the manuscript. Can be signed but often anonymous.

Descriptive Reports

Descriptive reports are often made for industry or geological surveys. These describe the composition and structure of rocks in an area. Sometimes they include estimations of resource potentials or environmental impacts of industry.

Research papers

These pieces of science writing typically test one or more closely related hypotheses in the context of existing scientific knowledge. Most have structure that is pre-defined including: abstract, introduction, methods, results, discussion, and conclusion. Figures are an integral part of most papers in the Geosciences and range from images of outcrops to abstracted summaries of observations to plots of measurements.

Conference abstracts

These are generally a step on the path to a full research publication where results, interpretations, and context are publicly presented for the first time.

Grant Applications

Scientific work is generally funded with public or private funds that are obtained by writing grants. Unlike research papers, grants must persuade reviewers that the research planned is important, can be done by the applicant, and can be achieved in the time frame of the funding request.

Science Communication

Scientists also write general summaries of their work for non-specialist audiences. These can be blog posts, or lesson plans that are shared for educators. Some folks also write books for general audiences describing the processes of science.

Common processes

For writing in the discipline, we focus on several specific questions to guide our composition: 1) Who is our audience? 2) What is the one or two sentence take-home point? 3) How quickly are we communicating the information?

Science writing, like all writing, is socially situated and caries with it the beliefs, values, and ideologies of the particular community and culture.

Tips and tricks for good writing

Use a citation management software to organize your papers and create bibiliographies. My preference is Zotero because it is free, open source, and works across multiple operating systems.

Write and then revise. Ask for feedback from peers or wait until you have some distance from your writing and then revise.

Prompt yourself with questions that have short, concrete answers.

Campus resources

COVID policy

While on campus, students are required to follow all USA COVID-19 policies and practices. These policies can be found at https://www.southalabama.edu/coronavirus/. Be advised that policies may change during the semester, and students should check the University's Coronavirus Update page regularly.

There is also a student incentive program for getting vaccinated. Details about insentives can be found at https://www.southalabama.edu/coronavirus/vaccineincentive/

Writing center

Over the course of this semester, seek help at the Writing Center if you would like additional guidance and critique. You can access the Writing Center at at their website. During graduate school, I found workshops and writing groups at the Writing Center on campus to be helpful in building my motivation and teaching me new strategies for writing efficiently.

Disabilities

In accordance with the Americans with Disabilities Act, students with bona fide disabilities will be afforded reasonable accommodations. The Office of Special Student Services (OSSS) will certify a disability and advise faculty members of reasonable accommodations. If you have a specific disability that qualifies you for academic accommodations, please notify the instructor/professor and provide certification from the Office of Special Student Services. OSSS is located at 5828 Old Shell Road at Jaguar Drive, (251-460-7212).

Food insecurity

If you are subject to food insecurity, JagPantry provides a food for students needing assistance. More information can be found on their website

Mental health

Being a university student is stressful and can negatively impact mental health. The University Counseling and Testing Center provides confidential, free counseling and crisis intervention services to eligible USA students and consultation and outreach services to members of the USA community. More information can be found at their website.

Disaster plan

In case of Hurricane we will follow university recommendations and off-campus accommodations will be made. Our broad goals for the semester will continue but mode of delivery and content may change.

In case of a shift to remote learning, we will heavily rely on Canvas. We will have at least one synchronous lecture meeting that will be recorded and made available through Canvas. We will use digital options for rock samples and may also use Rockd.org for local outcrop locations if we are dispersed.

Final thoughts

This document is a roadmap for our semester. We learn about the Earth together and our individual experiences shape how we interpret and value data. Like all your classes, you will get out what you put into this course. Asking for help from one another and your instructors is important, don't be afraid to ask a question about something you don't know or if you want to check your knowledge about something you think you know.

If this document is updated, a copy will be supplied to you via Canvas and changes will be announced in class.