

SYLLABUS for MATHEMATICS 5010/6805-002 Spring 2022
Introduction to Probability (3 credits)

CLASS HOUR

M W/ 6:00 pm - 7:30 pm in-person to follow the lecture starting on January 10 ending on April 26

CLASSROOM: LCB 215

INSTRUCTOR

- **Sung Chan Choi** (You can call me 'Sungchan')
- Office: JWB 113 (phone: (801) 581-6879)
- e-mail address: choi@math.utah.edu You can contact me via email or inbox in CANVAS.
- **Office Hour:** M W 4:20 pm-5:50 pm

COURSE DESCRIPTION

- This is a course on basic undergraduate probability. It is a prerequisite for many probability and statistics courses at the department of mathematics, such as Stochastic Processes (Math 5040/5050) and Statistical Inference (Math 5080/5090).
- Topics include: probability models, combinatorics, conditional probability, random variables, mathematical expectation and variance, moment generating functions, the law of large numbers, the central limit theorem, multivariate random variables, and conditional distributions.

PREREQUISITES Solid knowledge of Calculus I, II, and III. Comfortable around double integrals.

COURSE DETAILS

- **Attendance & Punctuality:**
If you are **absent** from a class, you **cannot take** the quiz on your absent day. There is no make-up.
- **Course Materials:**
 - Textbook: **Introduction to Probability**, by Anderson, Seppäläinen, and Valkó
(Cambridge University Press, 2018) (ISBN: 978-1108415859)
 - Lecture note: I will post lecture notes in "**Files**" on CANVAS.
- **Syllabus subject to change:** This syllabus is meant to serve as an outline and guide for our course. Please note that I may modify it with reasonable notice to you. I may also modify the Course Schedule to accommodate the needs of our class. Any changes will be announced in class and posted on Canvas.

IMPORTANT DATES

- Exam Dates:
 - **Exam 1 : February 16 (W) class time (6:00-7:30)**
 - **Exam 2 : March 16 (W) class time (6:00-7:30)**
 - **Exam 3 : April 20 (W) class time (6:00-7:30)**
 - **Final Exam : May 2 (M) 6:00 pm - 8:00 pm**
- Official Drop/Withdraw Dates:
 - last day to add without a permission code : January 14 (Fri)
 - last day to drop classes : January 21 (Fri)
 - last day to withdraw from this class : March 4 (Fri)
 - last day to reverse CR/NC : April 22 (Fri)
 - Visit [Spring 2022 - Office of the Registrar - The University of Utah](#)
 - **Withdrawing from a course and other matters of registration are the student's responsibility.**

- Holidays: There will be no class.
 - Martin Luther King Jr. Day: January 17 (Mon)
 - Presidents' Day : February 21 (Mon)
 - Spring Breat: March 6(Sun)-13(Sun)

ASSIGNMENTS, ASSESSMENT & GRADING

Semester letter grades will be converted from numerical semester scores (N) as follows:

100 ≥ N ≥ 93:A	93 > N ≥ 90:A-	90 > N ≥ 88:B+
88 > N ≥ 83:B	83 > N ≥ 80:B-	80 > N ≥ 78:C+
78 > N ≥ 73:C	73 > N ≥ 70:C-	70 > N ≥ 68:D+
68 > N ≥ 63:D	63 > N ≥ 60:D-	N < 60:E

The numerical grade consists of several components:

- **5%** of final grade: **Homework.** I'll post homework in "Files" on CANVAS weekly. You submit it by uploading on [Gradescope](#). Homework will be **graded for completeness** but not be graded for correctness. However, you should know that Exam questions will be very similar to the homework problems.
- **20%** of final grade: **Daily Quizzes.**
 - The quizzes are given in **every class**. The topic of the quiz will be given from the previous class. For example, if we study page1-4 of the lecture note on, January 10 then you need to study the topics of these 4 pages to take the quiz on January 12. I will post the study guide on "Files" in CANVAS. You must check your CANVAS frequently. You are **not allowed** to use any references. Not following these rules is considered academic misconduct and will be penalized as such. See further comments about academic misconduct below. If you are **absent** from a class, you **cannot take** it. Make-up quizzes are **not allowed**. However, the **lowest 4** quiz scores will be dropped at the end of the term. Since it is worth 20% of your grade, it may damage your grade if you ignore quizzes.
 - Quizzes can not be retaken.
- **54%** of final grade: **Three Midterm Exams.** There will be three midterm exams which are longer than quizzes. Each midterm will be worth 18%.
- **21%** of final grade: **Final Exam.** The **comprehensive** final exam will be on May 2 (M), 6:00 pm - 8:00 pm.
- **Students enrolled in math 6805 will have more questions in the exams.**
- **Calculator:** On the quizzes, the midterms and the final exam, you may use an arithmetic or scientific calculator. Graphing calculators and calculators which can connect to the internet or download software are not allowed on the exams.
- **Reference note:** You are allowed to use one 8*11-inch note (both sides) for your reference in the exams but NOT in the quizzes.
- **It is the student's responsibility to ensure the accuracy of all recorded homework, quizzes, online assignments, and exam grades. Also you should keep as record all your graded assignments. If you see any error in your grades on Canvas, reach out to the instructor as soon as possible, or at the latest within two weeks from when the assignment was returned.**
- **Incompletes:** According to university policy, to be considered for an incomplete, a student must have 20% or less of the course work remaining and be passing the course with a C or better. You must request an incomplete grade and I will consider giving that grade only under exceptional circumstances.

COMMUNICATION

- All course materials, such as lecture notes, assignments, solutions, grades, etc. will be posted on the Course Canvas site. Class announcements will be done via Canvas. You will be responsible for any information contained in them as well as the information announced in class.
- It is also your responsibility to check your Canvas messages regularly. There will be occasions during the semester that we may need to reach out to you individually (e.g. regarding a grade or assignment) and it is in your best interest to respond promptly.
- Feel free to contact me by email or Canvas message. I will do my best to answer emails promptly. I would like to encourage you to email me only if it is something personal that requires individual attention, if instead you have questions about logistics of the class, course material and assignments, and anything else your classmates may wonder as well, please post a question on the Discussions Board instead. This way the information is shared quickly to the entire class, and each of you can benefit from seeing other classmates' questions.
- I will always do my best to ensure the communication relevant to the course is clear and transparent, it is your responsibility as well to keep yourself updated by regularly checking: the announcements on Canvas, your Umail, the posts on the Discussions Board, and pay attention to the announcements given in class and Discussion Section.
- Students are expected to log in and check canvas every day for posted announcements and assignments. Students are also strongly advised to set up notifications for canvas so they do not miss any important notifications.

COVID-19 considerations: <https://coronavirus.utah.edu/>

- If you test positive for COVID, you need to do the following:
 - Isolate for five days.
 - Test again five days after the initial test.
 - Mask for five days when around others after the isolation period is over.
- As with all guidelines, you need to take your personal circumstances into account. If you are still experiencing symptoms on day six, you should remain isolated. If your test on day five still shows a viral load, you should take the appropriate action to not infect others. The University of Utah Contact Tracing Team will give you guidance based on your circumstances. Follow their advice.
- The 5-5-5 rule should also be followed by those who are exposed to COVID-19 and who have not been vaccinated against the virus, or who have not been boosted but are eligible for a booster shot. Again, that means that if you are exposed to somebody who has COVID-19, you should:
 - Stay home for five days.
 - Get tested on day five.
 - Wear a mask for five more days when around others.

- Salt Lake County has issued a mandatory mask order. This order applies to the University of Utah. All people are required to wear well-fitting masks indoors or while queueing outdoors. Masks are the first line of defense when you are around others, even if you are vaccinated. If you are in an indoor space with others or any large crowd you should be wearing one. Make sure it is covering both your mouth and your nose. Well-fitting surgical masks, KN95s, or N95s protect better than cloth masks.
- University leadership is monitoring COVID-19 infections and hospitalizations on a daily basis. Along with public health and legislative partners, we will continue to evaluate our health and safety protocols throughout the semester. Things could change rapidly and should circumstances change we will take steps to protect the wellbeing of our campus community. We urge everyone to be patient and kind to each other during these times. The ultimate kindness is to protect each other by following COVID protocols.

Students must self-report if they test positive for COVID-19 via this website: <https://coronavirus.utah.edu/>

NETIQUETTE - EXPECTATIONS FOR ONLINE LEARNING ENVIRONMENT

- Classroom equivalency: Respectful participation in all aspects of the course will make our time together productive and engaging. Zoom lectures, discussion threads, emails and canvas are all considered equivalent to classrooms and student behavior within those environments shall conform to the student code. Specifically:
 - Posting photos or comments that would be off-topic in a classroom are still off-topic in an online posting.
 - Disrespectful language and photos are never appropriate.
 - Using angry or abusive language is not acceptable, and will be dealt with according to the Student Code. The instructor may remove online postings that are inappropriate.
 - Do not use ALL CAPS, except for titles, or overuse certain punctuation marks such as exclamation points and question marks.
 - Course e-mails, e-journals, and other online course communications are part of the classroom and as such, are University property and subject to the Student Code. Privacy regarding these communications between correspondents must not be assumed and should be mutually agreed upon in advance, in writing.
- Other expectations for online communication (on Discussion Board, Emails, Zoom chat etc):
 - Emails: When emailing your Instructor and Teaching Team keep a professional tone.
 - Treat your instructor, teaching team and classmates with respect in email or any other communication.
 - Remember that all college level communication should have correct spelling and grammar (this includes discussion boards).
 - Avoid slang terms such as “wassup?” and texting abbreviations such as “u” instead of “you.”
 - Be cautious when using humor or sarcasm as tone is sometimes lost in an email or discussion post and your message might be taken seriously or be offensive to others.
 - Be careful with personal information (both yours and others).
- Online submissions: You are responsible for submitting the assignment with the required naming convention, correct file extension, and using the software type and version required for the assignment.

ACADEMIC CODE OF CONDUCT

Students are encouraged to review the Student Code for the University of Utah: <https://regulations.utah.edu/academics/6-400.php>. In order to ensure that the highest standards of academic conduct are promoted and supported at the University, students must adhere to generally accepted standards of academic honesty, including but not limited to refraining from cheating, plagiarizing, research misconduct,

misrepresenting one's work, and/or inappropriately collaborating. A student who engages in academic misconduct as defined in Part I.B. may be subject to academic sanctions including but not limited to a grade reduction, failing grade, probation, suspension or dismissal from the program or the University, or revocation of the student's degree or certificate. Sanctions may also include community service, a written reprimand, and/or a written statement of misconduct that can be put into an appropriate record maintained for purposes of the profession or discipline for which the student is preparing.

ADDITIONAL POLICIES AND RESOURCES

- **Inclusivity Statement:** It is my intent that students from all diverse backgrounds and perspectives be well served by this course, that students' learning needs be addressed both in and out of class, and that the diversity that students bring to this class be viewed as a resource, strength and benefit. It is my intent to present materials and activities that are respectful of diversity: age, color, disability, gender, gender identity, gender expression, national origin, political affiliation, race, religion, sexual orientation, and veteran status, and other unique identities. gender, sexuality, disability, age, socioeconomic status, ethnicity, race, culture, and other unique identities. Your suggestions are encouraged and appreciated. Please let me know ways to improve the effectiveness of the course for you personally or for other students or student groups. In addition, if any of our class meetings conflict with your religious events, please let me know so that we can make arrangements for you.
- **Discrimination and Harassment:** If you or someone you know has been harassed or assaulted, you are encouraged to report it to the Title IX Coordinator in the Office of Equal Opportunity and Affirmative Action, 135 Park Building, 801-581-8365, or Office of the Dean of Students, 270 Union Building, 801-581-7066. To report to the police, contact the Department of Public Safety, 801-585-2677(COPS). Please see Student Bill of Rights, section E <http://regulations.utah.edu/academics/6-400.php>. I will listen and believe you if someone is threatening you.
- **Names/Pronouns.** Canvas allows students to change the name that is displayed AND allows them to add their pronouns to their Canvas name. Class rosters are provided to the instructor with the student's legal name as well as "Preferred first name" (if previously entered by you in the Student Profile section of your CIS account, which managed can be managed at any time). While CIS refers to this as merely a preference, I will honor you by referring to you with the name and pronoun that feels best for you in class or on assignments. Please advise me of any name or pronoun changes so I can help create a learning environment in which you, your name, and your pronoun are respected. If you need any assistance or support, please reach out to the LGBT Resource Center. https://lgbt.utah.edu/campus/faculty_resources.php
- **English Language Learners.** If you are an English language learner, please be aware of several resources on campus that will support you with your language and writing development. These resources include: the Writing Center (<http://writingcenter.utah.edu/>); the Writing Program (<http://writing-program.utah.edu/>); the English Language Institute (<http://continue.utah.edu/eli/>). Please let me know if there is any additional support you would like to discuss for this class.
- **Undocumented Student Support.** Immigration is a complex phenomenon with broad impact—those who are directly affected by it, as well as those who are indirectly affected by their relationships with family members, friends, and loved ones. If your immigration status presents obstacles to engaging in specific activities or fulfilling specific course criteria, confidential arrangements may be requested from the Dream Center. Arrangements with the Dream Center will not jeopardize your student status, your financial aid, or any other part of your residence. The Dream Center offers a wide range of resources to support undocumented students (with and without DACA) as well as students from mixed-status families. To learn more, please contact the Dream Center at 801.213.3697 or visit dream.utah.edu.
- **Veterans Center.** If you are a student veteran, the U of Utah has a Veterans Support Center located in Room 161 in the Olpin Union Building. Hours: M-F 8-5pm. Please visit their website for more information about what support they offer, a list of ongoing events and links to outside resources: <http://veteranscenter.utah.edu/>. Please also let me know if you need any additional support in this class for any reason.

- **Wellness Statement.** Personal concerns such as stress, anxiety, relationship difficulties, depression, cross-cultural differences, etc., can interfere with a student's ability to succeed and thrive at the University of Utah. For helpful resources contact the Center for Student Wellness at www.wellness.utah.edu or 801-581-7776.
- **Student Success Advocates:** The mission of Student Success Advocates is to support students in making the most of their University of Utah experience (ssa.utah.edu). They can assist with mentoring, resources, etc. Any student who faces challenges securing their food or housing and believes this may affect their performance in the course is urged to contact a Student Success Advocate for support (<https://asuu.utah.edu/displaced-students>).
- **The Americans with Disabilities Act:** The University of Utah seeks to provide equal access to its programs, services and activities for people with disabilities. If you will need accommodations in the class, reasonable prior notice needs to be given to the Center for Disability & Access, 162 Olpin Union Building, 801-581-5020. CDA will work with you and the instructor to make arrangements for accommodations. All written information in this course can be made available in alternative format with prior notification to the Center for Disability & Access.
- **Addressing Sexual Misconduct:** Title IX makes it clear that violence and harassment based on sex and gender (which includes sexual orientation and gender identity/expression) is a Civil Rights offense subject to the same kinds of accountability and the same kinds of support applied to offenses against other protected categories such as race, national origin, color, religion, age, status as a person with a disability, veteran's status or genetic information. If you or someone you know has been harassed or assaulted on the basis of your sex, including sexual orientation or gender identity/expression, you are encouraged to report it to the University's Title IX Coordinator; Director, Office of Equal Opportunity and Affirmative Action, 135 Park Building, 801-581-8365, or to the Office of the Dean of Students, 270 Union Building, 801-581-7066. For support and confidential consultation, contact the Center for Student Wellness, 426 SSB, 801-581-7776. To report to police, contact the Department of Public Safety, 801-585-2677(COPS).
- **Campus Safety:** The University of Utah values the safety of all campus community members. To report suspicious activity or to request a courtesy escort, call campus police at 801-585-COPS (801-585-2677). You will receive important emergency alerts and safety messages regarding campus safety via text message. For more information regarding safety and to view available training resources, including helpful videos, visit safeu.utah.edu
- **University Counseling Center** The University Counseling Center (UCC) provides developmental, preventive, and therapeutic services and programs that promote the intellectual, emotional, cultural, and social development of University of Utah students. They advocate a philosophy of acceptance, compassion, and support for those they serve, as well as for each other. They aspire to respect cultural, individual and role differences as they continually work toward creating a safe and affirming climate for individuals of all ages, cultures, ethnicities, genders, gender identities, languages, mental and physical abilities, national origins, races, religions, sexual orientations, sizes and socioeconomic statuses.
- **Office of the Dean of Students** The Office of the Dean of Students is dedicated to being a resource to students through support, advocacy, involvement, and accountability. It serves as a support for students facing challenges to their success as students, and assists with the interpretation of University policy and regulations. Please consider reaching out to the Office of Dean of Students for any questions, issues and concerns. 200 South Central Campus Dr., Suite 270. Monday-Friday 8 am-5 pm.