

IDS 101: Doing Mathematics

Fall 2022 Syllabus

Instructor: Dr. Colin Starr (he/him) **Office Hours:** MWF 9:10-10
Office: Ford 213 TΘ 9-10, 1:30-2:30 (Zoom)
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Colloquium Associate: Rynn Locker, kmlocker@willamette.edu
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CHASE Meetings: Mondays, 3-4pm.

Student Learning Outcomes: This course is an introduction to college with a focus on mathematical thinking.

CC Critically examine information and/or texts (written, oral, artistic, or quantitative) by identifying central ideas or arguments, making inferences, questioning underlying assumptions, and assessing evidence.

CC Learn to contribute to a constructive classroom climate through participation in thoughtful, informed, and responsive discussion, effective speaking, active listening, and the development of an iterative group process of critical analysis and interpretation.

CC Effectively formulate ideas and arguments, develop them through an iterative process, and express them clearly and persuasively via linguistic, artistic, and/or quantitative modes of communication.

1. Learn to approach problems from a mathematical perspective.
2. Learn to embrace repeated failure in the problem solving process and to accept being wrong.
3. Gain a better understanding of what mathematics is.

Course structure: Most days, we will think about mathematical problem solving. In addition, we will have two term papers. We will also discuss college life in general and how to succeed.

Assessment: The following components make up your assessment in this course:

Participation:	20%
Homework:	20%
Problem-solving journal:	20%
Presentations:	20%
Papers:	20%

Grades must fall into the categories below to guarantee the corresponding letter grade. Plus and minus grades are at my discretion but generally correspond to trends in your performance. (E.g., a 90 could be an A or A-.)

Letter Grade	A	B	C	D	F
Minimum Percentage	90	80	70	60	

Participation: Participation takes many forms. I know that not everyone is comfortable speaking in a group setting, while others enjoy it. This part of your grade is not intended to punish or reward anyone for an aspect of their personality. However, everyone comes in with ideas worth sharing, and I want you to share them. The problem-solving journal entries (see below), for example, can help you prepare something to say in advance. I may need to call on you to speak more (or less, in some cases...) – when you respond, that still counts as participation. You might not say something every day, either, and still have a good participation grade. Good participation includes listening, speaking in turn, and *not* speaking sometimes. I will periodically update you on my perception of your participation and ask for yours. Participation is worth 6 points per day. Since we have 37 class days, this is 222 points, while participation is only worth 200 points. This gives you a little cushion if you need to miss class for some reason. Note that university-sponsored absences are excused, which means you can make up that missed participation if you so choose. With the cushion, however, it may not be necessary to do so.

Homework: We will work on problems together every day, but we will usually not solve them completely in class. Finishing them, writing them up, and working on additional problems are all homework. Because of the nature of this course, which includes problems that will take extended amounts of time, I recommend keeping all of your solutions in a three-ring binder. Then you can turn that in to me and continue to work on problems that can be added in later. I will be grading for both correctness and effort. I want to see that you are trying things and making progress toward solutions, as well as actually reaching solutions.

Fridays are designated “Homework Days”: we will not hold class on Fridays (except for opening days and the first two weeks of classes). We will have five 3-person working groups. Each group will meet with me for half an hour each week to discuss progress on our problems. Two of those groups will meet with me during our Friday time; the other three will schedule a time to meet with me.

NOTE: You are welcome – encouraged, even – to work together with other students on these problems. However, each solution should include the names of all collaborators on the problem, and each should be written in your own words.

Problem-solving journal: You will need to make three entries each week in your problem-solving journal (a Google doc you have shared with me). These can be short as short or long as you need to get your reflections down. Write about problem solving you have done since your last entry. Guidelines:

1. Each entry should have the date at the beginning.
2. These can be about any problem solving you have done, whether related to this class or not.
3. You should clearly describe the problem and your approach. A solution is not necessary here, though it may be appropriate in some cases.
4. If you are discussing a problem you have solved, the entry should be at least somewhat modeled after Polya’s “Look back” step in problem solving.

Presentations: You will give two formal presentations this semester (in addition to more casual presentations that are part of participation). The first will be a solution to a single problem, a fairly short presentation worth 5%. Although short, it is to be prepared in advance and practiced. The presentation should work through all four stages of Polya’s problem-solving process. The second presentation will be in the last week of our class. It will be a group presentation worth 15% of your grade. You will have a half-hour block to present your major findings from the research area your group pursued.

Papers: These are the most substantial individual assignments this semester. We will have two mathematical papers about the work you will be doing on a substantial problem. Although both will be self-contained, the second will likely incorporate the first. More detail will appear on the assignments themselves.

Please note: Written responses to all questions must be in complete sentences. I expect correct use of grammar, spelling, and punctuation; your grade will reflect this!

Special Needs: If you have special needs (e.g., for a documented disability), it is your responsibility to approach me at least a day in advance of the need for accommodation. To receive accommodation, you must be registered with Disability Services; this office is located in Bishop Health Center in Baxter Hall. (Phone: (503) 370-6471.)

Cheating: Cheating will not be tolerated. The minimum penalty for cheating is a 0 on the assignment and a formal notification to the dean. **NOTE:** It is your responsibility to avoid even the appearance of cheating. See the website below for the Willamette policy on cheating and plagiarism. http://www.willamette.edu/cla/catalog/resources/policies/categories/plagiarism_cheating.php

Classroom Comportment: We will all make mistakes, and these are an essential part of learning. The classroom environment must be tolerant and welcoming so that everyone feels free to contribute without fear of ridicule or harassment. Treat everyone with respect, and we can all learn from each other.

You are WELCOME! My door is usually open. The office hours above are the times I will definitely be in my office (or nearby), but you are welcome to come by at other times as well. Make sure you come see me whenever you have a question.

General Policies

Academic Integrity

Students of Willamette University are members of a community that values excellence and integrity in every aspect of life. As such, we expect all community members to live up to the highest standards of personal,

ethical, and moral conduct. Students are expected not to engage in any type of academic or intellectually dishonest practice and encouraged to display honesty, trust, fairness, respect, and responsibility in all they do. Plagiarism and cheating are especially offensive to the integrity of courses in which they occur and against the College community as a whole. These acts involve intellectual dishonesty, deception, and fraud, which inhibit the honest exchange of ideas. Plagiarism and cheating may be grounds for failure in the course and/or dismissal from the College. <http://willamette.edu/cla/catalog/policies/plagiarism-cheating.php>

Commitment to Positive Sexual Ethics

Willamette is a community committed to fostering safe, productive learning environments, and we value ethical sexual behaviors and standards. Title IX and our school policy prohibit discrimination on the basis of sex, which regards sexual misconduct — including discrimination, harassment, domestic and dating violence, sexual assault, and stalking. We understand that sexual violence can undermine students' academic success, and we encourage affected students to talk to someone about their experiences and get the support they need. Please be aware that as a mandatory reporter I am required to report any instances you disclose to Willamette's Title IX Coordinator. If you would rather share information with a confidential employee who does not have this responsibility, please contact our confidential advocate at confidential-advocate@willamette.edu. Confidential support also can be found with SARAs and at the GRAC (503-851-4245); and at WUTalk - a 24-hour telephone crisis counseling support line (503-375-5353). If you are in immediate danger, please call campus safety at 503-370-6911.

DACA/Undocumented Student Advocate

Willamette is committed to supporting our DACA/Undocumented students in a variety of ways. This year, Olivia Muñoz is the contact person for all DACA/undocumented students can provide those students with a number of external and internal resources that are available. Her contact information is [email:omunoz@willamette.edu](mailto:omunoz@willamette.edu), Office: 3rd Floor UC, Phone: 503-370-6447.

Diversity and Disability Statement

Willamette University values diversity and inclusion; we are committed to a climate of mutual respect and full participation. My goal is to create a learning environment that is usable, equitable, inclusive and welcoming. If there are aspects of the instruction or design of this course that result in barriers to your inclusion or accurate assessment or achievement, please notify me as soon as possible. Students with disabilities are also encouraged to contact the Accessible Education Services office in Smullin 155 at 503-370-6737 or Accessible-info@willamette.edu to discuss a range of options to removing barriers in the course, including accommodations.

Religious Practice

Willamette University recognizes the value of religious practice and strives to accommodate students' commitment to their religious traditions whenever possible. Please let me know within the first two weeks of the semester if a conflict between holy days or other religious practice and full participation in the course is anticipated. I will do my best to work with you to determine a reasonable accommodation.

SOAR Center Offerings: Food, Clothing, and School Materials

The Students Organizing for Access to Resources (SOAR) Center strives to create equitable access to food, professional clothing, commencement regalia, and scholarly resources for WU and Willamette Academy students. The SOAR Center is located on the Putnam University Center's third floor (in the former Women's Resource Center and across from the Harrison Conference Room). The space houses the Bearcat Pantry, Clothing Share, and First-Generation Book Drive and is maintained by committed students and staff and faculty advisers.

Trans-Inclusive Classroom Space

I will gladly honor your request to address you by your affirmed name and gender pronouns. Please advise me of this at any point in the semester so that I may make appropriate changes to my records. If I accidentally use an incorrect gender pronoun when addressing you, please feel free to let me know, in whatever manner makes you comfortable, what pronouns you use so that I can make every effort to correct that error.

Land Acknowledgement

We are gathered on the land of the Kalapuya, who today are represented by the Confederated Tribes of the Grand Ronde and the Confederated Tribes of the Siletz Indians, whose relationship with this land continues to this day. We offer gratitude for the land itself, for those who have stewarded it for generations, and for the opportunity to study, learn, work, and be in community on this land. We acknowledge that our University's history, like many others, is fundamentally tied to the first colonial developments in the Willamette Valley. Finally, we respectfully acknowledge and honor past, present, and future Indigenous students of Willamette.

LinkedIn Learning

Willamette University tracks all log-in information for LinkedIn Learning. This information will be kept in-house and will be used for the purposes of developing LinkedIn Learning on campus. Faculty may keep track of your log-in for the purposes of evaluating your progress for class. Faculty using LinkedIn Learning in for class assignments will not share your log-in information with others as it is protected under FERPA.

Time Commitment

Willamette's Credit Hour Policy holds that for every hour of class time there is an expectation of 2-3 hours' work outside of class. Thus, for this class you should anticipate spending 6-9 hours outside of class engaged in course-related activities. Examples include reading course materials, preparing for discussion, and preparing and writing papers and exams.

Intellectual Property and Privacy

Class materials and discussions including recorded lectures are for the sole purpose of educating the students enrolled in the course. The release of such information (including but not limited to directly sharing, screen capturing, or recording content) is strictly prohibited, unless the instructor states otherwise. Doing so without the permission of the instructor will be considered an Honor Code violation and may also be a violation of other state and federal laws, such as the Copyright Act.