My Name: Dr. Katharine Shultis
My Office: Herak 228
My Email: shultis@gonzaga.edu
Office Phone: (509) 313-3909
Course Website: http://connect.gonzaga.edu/shultis/spring-2016-math-339
Office Hours: Mondays 3-4 pm, Tuesdays and Thursdays 2:15-3:15 pm (in Herak 228)
Or by appointment (please email me after looking at my schedule)
Textbook: No textbook is required or allowed for this class. Course notes can be found on the course website.
Course Meeting Times and Location: MWF 2:10-3:00 pm Paccar 003

Important Dates

<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
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</thead>
<tbody>
<tr>
<td>13 January</td>
<td>First Day of Class</td>
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<tr>
<td>18 January</td>
<td>Martin Luther King, Jr. Day - No Class</td>
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<tr>
<td>20 January</td>
<td>Last Day to Add a Class</td>
</tr>
<tr>
<td>22 January</td>
<td>Last Day to Drop a Class</td>
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<tr>
<td>12 February</td>
<td>Incompletes Revert to Provisional Grades</td>
</tr>
<tr>
<td>15 February</td>
<td>President’s Day - No Class</td>
</tr>
<tr>
<td>17 February</td>
<td>Exam 1 (tentative)</td>
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<tr>
<td>7-11 March</td>
<td>Spring Vacation - No Class</td>
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<tr>
<td>8 March</td>
<td>Mid-Semester Grades Due in Registrar’s Office</td>
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<tr>
<td>24 March</td>
<td>Last Day to Withdraw</td>
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<tr>
<td>25 March</td>
<td>Good Friday Holiday - No Class</td>
</tr>
<tr>
<td>28 March</td>
<td>Easter Holiday - No Class</td>
</tr>
<tr>
<td>1 April</td>
<td>Exam 2 (tentative)</td>
</tr>
<tr>
<td>4 May</td>
<td>Final Exam 3:30-5:30 pm</td>
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</tbody>
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Course Philosophy and Plan

Primary Assumption: Learning hard skills cannot be done by observing others.

Conclusion of the PA: It would be unethical of Dr. Shultis to do all of the mathematical work in this class. Instead, she should present the students with a well formulated plan to walk them through the development of the mathematics for themselves. Not only will the students learn more this way, but they will be better prepared for future courses (both within and outside mathematics) and for life after college.

Course Plan: A well formulated set of notes is posted to the course website. Before each class meeting, students will be expected to work on the problems/theorems/etc. in the class notes. In class, students will take turns presenting solutions to the class and it will be the responsibility of the class (not Dr. Shultis) to ask questions, and ensure that the solutions are correct.

Contract (i.e. Promises and Responsibilities)

Course Goals/Promises: In this course, I want you to come away with the following (probably incomplete) ranked list of skills:

1. The confidence to
   - know when your answers are correct,
   - ask questions,
   - admit that you don’t know (when you don’t), and
   - admit that you have made a mistake (when you have).

2. An appreciation of mathematics, persistence, and making mistakes.
3. The communication skills to explain the mathematics you’ve learned to other students.
4. The computational skills and conceptual understanding to answer questions in linear algebra involving
   - vectors,
   - linear spaces,
   - linear independence,
   - matrices,
   - inner product spaces, and
   - orthogonality.

Student Responsibilities: In order to meet all of the goals in this course, you need to promise to participate fully in the classroom. This includes the following (probably incomplete) list of actions:

   - Be prepared for class, including doing all homework, working the exercises in advance, and bringing materials to class that are essential for your participation in class.
   - Be motivated more by learning the material than by earning a good grade.
   - Help your classmates to learn the material.
   - Attend class, have your brain turned on, and communicate with me and the other students during class.
   - Have a positive attitude towards the material and the course as a whole.

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1 I expect you to not know things, so this is intentionally a “when” and not an “if.”
2 I also expect you to make mistakes, so this is intentionally a “when” and not an “if.”
ASSIGNMENTS AND GRADES

Your grade will be based upon the following assignments.

**Portfolio:** This will be a compilation of all of the problems, theorems, etc. that we’ve done in class by the end of the semester. I expect them to be correct, well-written, and neat. I encourage the use of a binder (and have an example to look at if you’d like) and will grade each problem on a binary scale (correct, well-written, and neat - or not). Your final draft will be due on the last day of class, but I will collect them and give you feedback at each midterm exam time.

**Participation:** I expect that everyone will contribute their fair share (approximately 1/14th) of the problems done on the board and questions to the presenters. An incomplete or incorrect solution can get you full credit for participating. I’d like to give everyone full credit on this, but will no longer insist on giving everyone a chance to present before we start a new round. The responsibility of presenting your fair share is shifting to you starting Monday, 25 Jan.

**Quizzes:** There will be a quiz “every Monday” consisting of one problem from the previous week’s presentations. The quiz will be open notes (and I encourage you to have a neatly written solution to all of the previous week’s presented solutions). Having these early in the week will allow for you to take the weekend to ensure you’re on track for the next week. The first quiz will be on Wednesday, January 20th.

**Midterm Exams:** There will be two exams during the semester. Nominally, each will have an in-class and a take-home portion, but in practice there may be much more of one than the other. The exams are tentatively scheduled for Wednesday, February 17th and Friday, April 1st. If you know of a really good reason why one of these is a bad exam date, please let me know as soon as possible so that we can reschedule.

**Final Exam:** There will be a cumulative final exam. The final exam is scheduled for Star Wars Day\(^3\) 3:30-5:30 pm.

**Grade Distribution:** Each component of your grade will be given equal weight as follows:

<table>
<thead>
<tr>
<th>Assignment</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Portfolio</td>
<td>20</td>
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<tr>
<td>Participation</td>
<td>20</td>
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<tr>
<td>Quizzes</td>
<td>20</td>
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<tr>
<td>Midterms</td>
<td>20</td>
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<tr>
<td>Final Exam</td>
<td>20</td>
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</tbody>
</table>

**Grade Ranges:** Here is a starting grade range. I reserve the right to give you a higher grade than you earn on this scale and will update it during the semester if it becomes clear that it will not result in an accurate assessment of your learning.

- A \(\geq 90\)
- 90 \(>\) B \(\geq 80\)
- 80 \(>\) C \(\geq 70\)
- 70 \(>\) D \(\geq 60\)
- 60 \(>\) F

Plusses and minuses may be attached to grades within each of these ranges at the discretion of the instructor.

\(^3\)Also known as Wednesday, May 4th
Course Policies

Academic Honesty: Academic honesty is expected of all Gonzaga University students. While it is important and useful to work with others in solving problems, everything you turn in should be your own work. In particular, it is expected that you understand and write up all homework problems for yourself. If you have questions about what constitutes academic honesty in this class, please do not hesitate to ask me. Academic dishonesty will not be tolerated, and may result in a failing grade for the course. For more information on the official Gonzaga University policy, see “Academic Honesty” in the University’s online catalogue: [http://www.gonzaga.edu/catalogues/](http://www.gonzaga.edu/catalogues/)

Accommodations: The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability/medical condition requiring an accommodation, please call (Ext. 4134) or visit the Disability Access office (previously known as DREAM) in room 209 of Foley Library.

Additional Help: The best place to obtain extra help is in my office hours. In addition to regularly scheduled office hours, I am also happy to set up an appointment with you to either ensure you have my full attention, or to meet with you at a time that works better for you. Please take a look at [my schedule](http://www.gonzaga.edu/catalogues/) and email me if you’d like an appointment.

Attendance: I follow strictly the university’s standard policy on absences: the maximum allowable absence is two class hours (100 minutes) for each class credit. For a three-credit class meeting three times a week, the maximum number of absences allowed is six. The grade for excessive absences is “V”, which has the same effect as “F” (Fail) and is counted in the GPA. For more information on the official Gonzaga University policy, see “Class Attendance Policy” in the University’s online catalogue: [http://www.gonzaga.edu/catalogues/](http://www.gonzaga.edu/catalogues/)

Calculators: Calculators will NOT be allowed on any of the exams or quizzes in this course.

Extra Credit: There is NO EXTRA CREDIT available in this class. If a good grade is important to you, then complete all homework assignments and study. You will not be able to raise your grade at the end of the semester with extra credit.

Makeup Exams: In general, NO makeup examinations will be given. IF an examination is missed due to illness then (1) the illness must be of sufficient severity to be verified in writing by the University Health Center or by a local physician, and (2) the instructor must be informed prior to the examination. A makeup exam given due to the death or illness of an immediate family member must be verified with documentation. If it is decided that there are sufficient reasons for a makeup examination to be given, the exam will be scheduled during the last week of class and will be more difficult than the original exam.
A note on harassment, discrimination, and sexual misconduct: Consistent with its mission, Gonzaga seeks to assure all community members learn and work in a welcoming and inclusive environment. Title VII, Title IX and Gonzaga’s policy prohibit harassment, discrimination and sexual misconduct. Gonzaga encourages anyone experiencing harassment, discrimination or sexual misconduct to talk to someone from the Campus and Local Resources list found in the Student Handbook: [http://www.gonzaga.edu/studenthandbook](http://www.gonzaga.edu/studenthandbook) about what happened so they can get the support they need and Gonzaga can respond appropriately. There are both confidential and non-confidential resources and reporting options available to you. Gonzaga is legally obligated to respond to reports of sexual misconduct, and therefore we cannot guarantee the confidentiality of a report, unless made to a confidential resource. Responses may vary from support services to formal investigations. As a faculty member, I am required to report incidents of sexual misconduct and thus cannot guarantee confidentiality. I must provide our Title IX coordinator with relevant details such as the names of those involved in the incident. For more information about policies and resources or reporting options, please visit the following websites: [http://www.gonzaga.edu/eo](http://www.gonzaga.edu/eo) and [http://www.gonzaga.edu/titleix](http://www.gonzaga.edu/titleix).

A note on homework: Assigned homework has the following three purposes:

1. to specify the material students will be responsible for,
2. to provide relevant examples for class discussions and,
3. most importantly, to provide material through which the student can enhance their knowledge of the subject.

Frequently there will be time at the beginning of the class period devoted to answering questions pertaining to the homework. Mathematics can only be mastered through practice - that means completing all homework assignments!

A note on proper classroom etiquette: I may occasionally want you to use your cell phones in class, so I do not want to make an official policy on cell phones and other technology. However, you should certainly be respectful of yourself and your classmates by using proper classroom etiquette at all times. If it becomes clear that we need to have a discussion about what constitutes proper classroom etiquette, we will do that as a class, and may set some official behavior policies.