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**DISCRETE MATHEMATICS**

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<b>Instructor:</b>	Dr. Vince Matsko
<b>Office:</b>	HSC 119E, x4680
<b>Office Hours:</b>	MW 12:00–1:30
<b>Class Times:</b>	MWF 2:15–3:20 (Section 01), Harney 430
<b>Website:</b>	<a href="http://www.vincematsko.com">www.vincematsko.com</a>
<b>Texts:</b>	<a href="#">Discrete Mathematics</a> , by Oscar Levin (open source); and <a href="#">A Gentle Introduction to Algorithm Complexity Analysis</a> , by Dionysis Zindros (open source).

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**Course Description by Topics:**

1. Sets and operations on sets;
2. Functions (injections, surjections, bijections);
3. Basic counting (additive and multiplicative principles, principle of inclusion/exclusion);
4. Binomial coefficients;
5. Permutations and combinations;
6. Arithmetic and geometric sequences;
7. Recurrence relations;
8. Mathematical induction;
9. Propositional logic;
10. Writing proofs;
11. Graph theory (planar/non-planar graphs, edge/vertex coloring, Euler paths/circuits, Hamiltonian paths);
12. Relations;
13. Algorithmic complexity.

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**Course components:**

- **Homework:** Problems will be assigned on a daily basis. Roughly each week, a homework quiz will be given. For a homework quiz, you may bring your notebook. There will be some problems which are identical in form to a problem from your homework, but with some slight variation (perhaps just the numbers changed). These quizzes are given at the beginning of class, and arriving late will simply mean you have less time to complete the quiz. No extra time will be given if you are late.

Please take these quizzes seriously. Since you may use your notes, keeping up with your homework is key to doing well on these quizzes.

There will also occasionally be written homework assignments as well, which involve writing short proofs.

- **In-class assessments:** There will be two in-class exams and a Final Exam. Most questions will be relatively straightforward and based on the homework questions, although some will be more challenging and test your conceptual understanding.

The dates for the exams are Friday, February 23 and Wednesday, April 4. There is a cumulative Final Exam **scheduled** for Monday, May 14 from 3:00—5:00. However, I will be requesting a three-hour time slot for your exams, so the **date and time may change**.

There are no make-up exams. If you miss an exam for any reason, your Final Exam will count for the relevant percentage of your course grade. You must arrange your end-of-semester travel so that you are present for the Final Exam. Students scheduled for the Wednesday Final may NOT take their exam early on Monday. Any changes in your Final Exam must be communicated by the Dean *in writing* (University policy).

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**Attendance:** You are expected to be in class every day. Simply put, you'll get out of your college experience what you put into it. While in class, you should be paying attention – not texting or sleeping. Cell phones should never ring, and should never be visible (unless used as a calculator during a classroom activity). When quizzes or exams are given, no extra time will be given to a student who arrives late. Just maintain a comfortable classroom environment where everyone can learn as much as they can.

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**Grading policy:**

The course components are weighted as follows:

Course component	Percentage
Homework/homework quizzes	25%
First Exam	20%
Second Exam	20%
Final Exam	35%

Before the Final Exam, your course average will be computed. If your Final Exam score is *higher* than your course average going in, your Final Exam score will be weighted 50%.

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**Withdrawals and Incompletes:** The last day to withdraw from the course is Monday, April 9. If you plan to withdraw from the course, it is your responsibility to complete the necessary paperwork by this date. You will not be allowed to withdraw after this date. An incomplete grade will be given only if you have a serious emergency, such as a medical condition, that prevents you from completing the course. You must produce proper documentation and must be passing the course with most of it complete. An incomplete grade will not be granted to avoid failing the course.

Note that your second exam is on Wednesday, April 4. Your exams will be handed back on Friday, April 6, along with your course average to date. If you need to drop the course, you may do so during Office Hours on Monday, April 9.

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**Academic Honesty:** As a Jesuit institution committed to *cura personalis* – the care and education of the whole person – USF has an obligation to embody and foster the values of honesty and integrity. USF upholds the standards of honesty and integrity from all members of the academic community. All students are expected to know and adhere to the University's Honor Code. You can find the full text of the code online at [www.usfca.edu/fogcutter](http://www.usfca.edu/fogcutter). You are encouraged to discuss the homework problems and course material with other students and with me during office hours. However, the homework that you hand in should reflect your own understanding of the material. You are NOT allowed to simply copy solutions from other students or other sources. Complete academic honesty is expected during exams. Cheating on an exam will result in an automatic failing grade (F) for the course.