

COURSE INFORMATION

Basic Information

Instructor: Dr. Jeong-Hyun Kang

jkang@westga.edu ; *UWG email (not CourseDen email) is the best way to contact me!*

Office: Boyd 328

Pre-requisites: MATH 3003 (any proof-based mathematics course will do)

Course Website: <https://sites.google.com/a/westga.edu/jkang/teaching/5653>

Textbook(s):

- Combinatorics: a guided tour by David R. Mazur
- The Art and Craft of Problem Solving, 2nd ed. by Paul Zeitz

Course Contents

Course Description: This is the first problem solving course in the area of counting and combinatorics. It is to expose students to middle and high school mathematics contest problems and to help them discover efficient problem solving strategies in counting. The students will learn the basic results and tools in combinatorics and number theory, then are invited to solve typical problems. The hints will be provided by the instructor as needs be. Students will gradually be introduced to various classical problems.

Learning outcomes: The students are expected to

- gain and improve their skills in problem solving,
- reduce and simplify complex system
- acquire practical knowledge of a wide range of mathematical techniques,
- learn to communicate mathematical ideas both orally and in writing,
- be able to coach middle and high school students for math competitions.
- be able to solve Math contest problems from AMC 8, AMC 10/12, and Math Counts.

Study Plan and Assignments**Assignments:**

- Assignments will be uploaded, based on the textbooks, once or twice a week.
- Some of the easier questions will be asked to submit within two days to ensure you follow the course in a timely manner. **No late submission will be accepted** for this type of submission.

- Some of the harder questions will be asked to submit in a week. **Late submission will be accepted with reduced rate as follows:** 100% of your score if submitted by the due date; 90% if submitted within three days after due date; 70% if submitted within one week after due date. No assignment will be accepted in a week after the due date.

One take-home exam: Tentatively March 6; can be adjusted to late Feb. or early March.

One proctored exam: Tentatively May 1

Grading Policy

Submission of Assignments and the take-home exam:

Submit an electronic file through an email. It can be typed (preferable) or handwriting and scanned. Either way, your solution should be clearly legible.

All the submission including the proctored exam:

Your arguments of the solutions and proofs are expected to be logically presented at a math graduate level. Scribbled ideas or a final answer without showing procedure won't earn any credit.

Posting your grades: Your scores will posted in "your 5653 folder" that you will be invited to access by me later.

Grading and Evaluation

- Assignments 100 pts (The total of the assignments will be scaled into 100 pts at the end if necessary)
- One take home exam 50 pts
- One proctored exam 50 pts
- Extra credit points at my discretion.
- 200 points total: $\geq 90\%$ A; $\geq 80\%$ B; $\geq 70\%$ C; below 70% F

Other Course Policies

Communications: Since it's an online course, the main communication to you is via email. Please check UWG email (NOT CourseDen email) everyday. Email communications regarding the course should be done only in the domain of westga.edu.

Online Office Hours: The formal office hours will be 2-4:30 (tentative) on MW, but I usually check & reply emails diligently.

University Policies

Please carefully review the following information at <https://www.westga.edu/UWGSyllabusPolicies/> or <https://www.westga.edu/administration/vpaa/common-language-course-syllabi.php>. It contains important material pertaining to your rights and responsibilities in this class, such as **Honor Code, UWG Email Policy, Credit Hour Policy, and Accessibility Services**. See below.

Academic Support

Accessibility Services: Students with a documented disability may work with UWG Accessibility Services to receive essential services specific to their disability. All entitlements to accommodations are based on documentation and USG Board of Regents standards. If a student needs course adaptations or accommodations because of a disability or chronic illness, or if he/she needs to make special arrangements in case the building must be evacuated, the student should notify his/her instructor in writing and provide a copy of his/her Student Accommodations Report (SAR), which is available only from Accessibility Services. Faculty cannot offer accommodations without timely receipt of the SAR; further, no retroactive accommodations will be given. For more information, please contact Accessibility Services.

University Writing Center: The University Writing Center assists students with all areas of the writing process. For more information, contact them: 678-839-6513 or writing@westga.edu

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Honor Code: At the University of West Georgia, we believe that academic and personal integrity are based upon honesty, trust, fairness, respect, and responsibility. Students at West Georgia assume responsibility for upholding the honor code. West Georgia students pledge to refrain from engaging in acts that do not maintain academic and personal integrity. These include, but are not limited to, plagiarism, cheating, fabrication, aid of academic dishonesty,

lying, bribery or threats, and stealing.

The University of West Georgia maintains and monitors a confidential Academic Dishonesty Tracking System. This database collects and reports patterns of repeated student violations across all the Colleges, the Ingram Library, and the School of Nursing. Each incidence of academic dishonesty is subject to review and consideration by the instructor, and is subject to a range of academic penalties including, but not limited to, failing the assignment and/or failing the course. Student conduct sanctions range from verbal warning to suspension or expulsion depending on the magnitude of the offense and/or number of offenses. The incident becomes part of the student's conduct record at UWG.

Additionally, the student is responsible for safeguarding his/her computer account. The student's account and network connection are for his/her individual use. A computer account is to be used only by the person to whom it has been issued. The student is responsible for all actions originating through his/her account or network connection. Students must not impersonate others or misrepresent or conceal their identities in electronic messages and actions. For more information on the University of West Georgia Honor Code, please see the Student Handbook.

UWG Email Policy: University of West Georgia students are provided a MyUWG e-mail account. The University considers this account to be an official means of communication between the University and the student. The purpose of the official use of the student e-mail account is to provide an effective means of communicating important university related information to UWG students in a timely manner. It is the student's responsibility to check his or her email.

Credit Hour Policy:

The University of West Georgia grants one semester hour of credit for work equivalent to a minimum of one hour (50 minutes) of in-class or other direct faculty instruction AND two hours of student work outside of class per week for approximately fifteen weeks. For each course, the course syllabus will document the amount of in-class (or other direct faculty instruction) and out-of-class work required to earn the credit hour(s) assigned to the course. Out-of-class work will include all forms of credit-bearing activity, including but not limited to assignments, readings, observations, and musical practice. Where available, the university grants academic credit for students who verify via competency-based testing, that they have accomplished the learning outcomes associated with a course that would normally meet the requirements outlined above (e.g. AP credit, CLEP, and departmental exams).