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MAD 4203 Combinatorics 1

University of Florida, Fall 2021

Keene–Flint Hall 109 , MWF7 (1:55–2:45)

Instructor information:

Vince Vatter

Office: Little Hall 412

Office hours: tba

Office phone: (352) 294-2338

Email: vatter@ufl.edu

Tentative schedule

Coming soon, but the dates of exams are expected to be 9/19, 10/17, 11/7, and 12/5 (all are Mondays).

Text

Bóna 's *Walk Through Combinatorics*, 4th edition.

Course content

Permutations and combinations, binomial coefficients, inclusion-exclusion, recurrence relations, Fibonacci sequences, generating functions and graph theory. (Roughly, chapters 1–10.)

Expectations and grading rubric

Work submitted for a grade in this course will be graded in a most rigorous fashion, and should be prepared with a good deal of thought and care.

Theory II S19

Most of the work required in this course will consist of writing proofs. For a problem worth 10 points, scores will be based on the following guidelines.

Advanced
Calculus I F18**0 points.**

The work contains no original steps toward a correct solution. This includes work that simply consists of relevant definitions or theorems without interpretation.

Combinatorial
Theory I F18**3 point.**

The work contains some original steps toward a correct solution but does not contain a workable outline of the full solution. This grade is also used if the student has misunderstood the question or made an unwarranted simplifying assumption that makes the problem trivial.

Abstract Algebra
S17**6 points.**

The work contains an outline of a correct solution and several steps toward this solution. However, the writing may be unclear, or there may be holes in the argument.

Linear Algebra
S16**8 points.**

The work resembles a full, complete proof, but it has some serious deficiencies. These may include incomplete sentences, abbreviating words with logical symbols such as those for “for all” or “implies”, imprecise definitions, or overlooking trivial cases. In general this grade is reserved for work which would receive 4 points with minor revision.

Linear Algebra
F15**10 points.**

The work consists of a full, complete proof and is reasonably well written in complete sentences, without logical symbols. There may be minor typos or clumsy writing that could be improved, but no important steps of the solution are omitted or incorrect.

Combinatorics II
S15Topics in
Combinatorics
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F14

Evaluation

There will be **4 exams, some number of homework assignments, and 5 quizzes** throughout the semester, as indicated in the schedule.

Linear Algebra
F14

The exams will collectively count for 50% of your grade, the homework assignments for 30%, and the quizzes for 20%.

Differential
Equations S13

Final letter grades will be assigned on a curve, which will be no tougher than the 10-point scale: 90%–100% will be some form of A, 80–90% will be at least some form of B, etc.

It is currently planned that exams will be in-person in the classroom. Homework will be written, scanned, and submitted through Canvas. Quizzes will be untimed, multiple choice, and on Canvas. Exams will be closed-book without notes. For quizzes and homework assignments, you are encouraged to consult your notes and textbook.

Late assignments will not be accepted except by prior agreement.

If you have a disagreement with the grading of one of your solutions, I ask that you submit a written request for reconsideration within one month.

Grading will be in accordance with the UF policy stated at <https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx>.

Honor code

UF students are bound by The Honor Pledge which states, “We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honor and integrity by abiding by the Honor Code. On all work submitted for credit by students at the University of Florida, the following pledge is either required or implied: **“On my honor, I have neither given nor received unauthorized aid in doing this assignment.”** The [Honor Code](#) specifies a number of behaviors that are in violation of this code and the possible sanctions. Furthermore, you are obligated to report any condition that facilitates academic misconduct to appropriate personnel. If you have any questions or concerns, please consult with the instructor.

Class attendance

Attendance is strongly encouraged but is not a component of grades.

Requirements for class attendance and make-up exams, assignments, and other work in this course are consistent with university policies that can be found at <https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx>.

Accommodations for students with disabilities

Students with disabilities requesting accommodations should first register with the Disability Resource Center (352-392-8565, <https://www.dso.ufl.edu/drc/>) by providing appropriate documentation. Once registered, students will receive an accommodation letter which must be presented to the instructor when requesting accommodation. Students with disabilities should follow this procedure as early as possible in the semester.

Online evaluations

Students are expected to provide feedback on the quality of instruction in this course by completing online evaluations at <https://evaluations.ufl.edu>. Evaluations are typically open during the last two or three weeks of the semester, but students will be given specific times when they are open. Summary results of these assessments are available to students at <https://evaluations.ufl.edu/results/>.

Complaints

The official UF policy for filing a complaint about the course may be found [here](#) .

Counseling and wellness center

<https://counseling.ufl.edu/> , 392-1575; and the University Police Department: 392-1111 or 9-1-1 for emergencies.

U matter, we care

Your well-being is important to the University of Florida. The U Matter, We Care initiative

is committed to creating a culture of care on our campus by encouraging members of our community to look out for one another and to reach out for help if a member of our community is in need. If you or a friend is in distress, please contact umatter@ufl.edu so that the U Matter, We Care Team can reach out to the student in distress. A nighttime and weekend crisis counselor is available by phone at 352-392-1575. The U Matter, We Care Team can help connect students to the many other helping resources available including, but not limited to, Victim Advocates, Housing staff, and the Counseling and Wellness Center. Please remember that asking for help is a sign of strength. In case of emergency, call 9-1-1.

In-class recording

Students are allowed to record video or audio of class lectures. However, the purposes for which these recordings may be used are strictly controlled. The only allowable purposes are (1) for personal educational use, (2) in connection with a complaint to the university, or (3) as evidence in, or in preparation for, a criminal or civil proceeding. All other purposes are prohibited. Specifically, students may not publish recorded lectures without the written consent of the instructor.

A “class lecture” is an educational presentation intended to inform or teach enrolled students about a particular subject, including any instructor-led discussions that form part of the presentation, and delivered by any instructor hired or appointed by the University, or by a guest instructor, as part of a University of Florida course. A class lecture does not include lab sessions, student presentations, clinical presentations such as patient history, academic exercises involving solely student participation, assessments (quizzes, tests, exams), field trips, private conversations between students in the class or between a student and the faculty or lecturer during a class session.

Publication without permission of the instructor is prohibited. To “publish” means to share, transmit, circulate, distribute, or provide access to a recording, regardless of format or medium, to another person (or persons), including but not limited to another student within the same class section. Additionally, a recording, or transcript of a recording, is considered published if it is posted on or uploaded to, in whole or in part, any media platform, including but not limited to social media, book, magazine, newspaper, leaflet, or third party note/tutoring services. A student who publishes a recording without written consent may be subject to a civil cause of action instituted by a person injured by the publication and/or discipline under UF Regulation 4.040 Student Honor Code and Student Conduct Code.