RUTGERS
Graduate School of Education

Learning and Teaching
Graduate School of Education
Rutgers, The State University of New Jersey
10 Seminary Place
New Brunswick, NJ 08901-1183

http://gse.rutgers.edu/

Ph: 732-932-7496, Ext. 8125
Fax: 732-932-7552

Topics in Mathematics Education: Problem Solving in Discrete Mathematics
15:254:597 (1)
3 Credits

Instructor: Cathy Liebars	liebars@tcnj.edu
Phone Number: 609-771-3043	Summer office: SERC 221, Busch
Office Hours: by appointment	Prerequisites & limitations: Open only to Partnership Fellows in NJ PEMSM
Mode of Instruction: ___ Lecture __X_ Seminar ___ Hybrid ___ Online ___ Other	Permission required: __ No _x_Yes Directions about where to get permission numbers: *Students with permission will be block registered* *by Dr. Marjory Palius*

Learning goals

1. to deepen understanding of mathematical content and mathematical practices
2. to help teachers engage their students more actively in studying and learning math
3. to increase confidence in communicating multiple representations of the mathematical problems and multiple approaches to problem solving in discrete math.
4. to appreciate how multiple representation and multiple approaches can sharpen one's own intuition and help others sharpen their intuitions.

Course catalogue description

Elementary mathematical modeling and problem solving arising from discrete m athematics, systematic counting, m ap coloring, use of vertex-and-edge graphs, and number patterns. Prerequisite: Permission of the instructor;

Class materials:

No assigned textbook. All materials will be posted on Sakai. Directions for accessing the proper Sakai site will be available on the first day of class.

Reading List

See paragraph above

Suggested Extra Reading

See paragraphs above

Grading and Activities

Your final grade will be determined by your performance in each graded class component by the following rubric. Expectations will be spelled out more clearly on the Sakai site.
Rubric:
   1 – does not meet expectations,
   2 – moving towards meeting expectations if permission is given for revision of an assignment;
   3 – substantially meets expectations;
   4 – fully meets expectations
General standards

1. attends actively, asks questions frequently to colleagues and staff as appropriate
2. participates actively and constructively in workshop sessions
3. presents clearly when in a group presenting a problem from a prior workshop
4. writes written problem solutions clearly in assigned format and submits by deadline.

5.   revises daily assignments as requested, not otherwise.
6.   write "final four" problem solutions clearly in proper format and submits by deadline.
7.   employ the mathematical practices of the Common Core State Standards in Math

Description of activities
Class meets daily July 21-25 and July 28 – Aug 1, 2014.
Class starts at 9am. Class is dismissed at 4pm M-Th and at 3pm on F.
Class meets in SERC 206 on Busch Campus.

Attendance, participation in class discussions: Attendance and participation in each class meeting are crucial for your learning. Discussions in class will focus on problem solving, clear oral communication in small and large groups, and connections to classroom practice. Most work will be in small groups. Groups will be assigned and re-organized from time to time.

Quizzes none

Homework: Homework assignments will vary. Details will be posted on Sakai

Presentations: Each day (except the first) two groups will report orally to the full class on the previous day's workshop problems. Each group will be assigned one problem to present. The two problems will differ. Groups making oral reports will not have written homework to turn in that day.

Final "exam": Each teacher participant will turn in solutions to a "final four" problem set. These will differ from problems presented orally.   Details of how to select your "final four" will appear on Sakai and be discussed in class.

Academic integrity: Make sure that you provide proper citations for all materials that you use in any written work submitted for grading. You are responsible for reading and follow the Rutgers policies on academic integrity.

Teachers must uphold the highest level of academic and professional integrity. The Rutgers policy can be found at
http://academicintegrity.rutgers.edu
Please be aware of the following definitions of plagiarism:
        Plagiarism is the use of another person's words, ideas, or results without giving that person appropriate credit. To avoid plagiarism, every direct quotation must be identified by quotation marks or appropriate indentation and direct quotations and paraphrasing must be cited properly according to the accepted format for the particular discipline or as required by the instructor of the course.
        More detail appears on the Sakai course page.

Tentative list of topics for discussions day by day

Day	Topic				
1-3	Path tracing and map coloring				
3-5	Number patterns with various applications				
5-7	Systematic counting with various applications				
7-10	Connections among topics and more applications				

RUTGERS

Rutgers University welcomes students with disabilities into all of the University's educational programs. In order to receive consideration for reasonable accommodations, a student with a disability must contact the appropriate disability services office at the campus where you are officially enrolled, participate in an intake interview, and provide documentation: https://ods.rutgers.edu/students/documentation-guidelines. If the documentation supports your request for reasonable accommodations, your campus's disability services office will provide you with a Letter of Accommodations. Please share this letter with your instructors and discuss the accommodations with them as early in your courses as possible. To begin this process, please complete the Registration form on the ODS web site at:

https://ods.rutgers.edu/students/registration-form.