




UNIVERSITY OF KENTUCKY

TRANSMITTAL

DATE: April 25, 2003

TO: Angel Clark
Senate Council

FROM: Lissa Holland 
Graduate Council

The Graduate School
351 Patterson Office Tower
Lexington, KY 40506-0027
(859) 257-4613
Fax: (859) 323-1928
www.rgs.uky.edu/gsl

The Graduate Council met on April 24, 2003, and approved the following:

COLLEGE OF ARTS & SCIENCES

Mathematics

NEW COURSE:

MA 614 – Enumerative Combinatorics (3 credits)

An introduction to the basic notions and techniques in enumerative combinatorics. The material has applications to polytopal theory, hyperplane arrangements, computational commutative algebra, representation theory and symmetric functions. Topics include generating functions, the principle of inclusion and exclusion, bijections, recurrence relations, partially ordered sets, the Mobius function and Mobius algebra, the Lagrange inversion formula, the exponential formula and tree enumeration.

Prerequisites: A graduate course in linear algebra or consent of instructor.

APPLICATION FOR NEW COURSE

Submitted by College of Arts and Sciences Date August 19, 2002

Department/Division offering course Mathematics

2. Proposed designation and Bulletin description of this course

a. Prefix and Number MA 614 b. Title* Enumerative Combinatorics

*NOTE: If the title is longer than 24 characters (including spaces), write
A sensible title (not exceeding 24 characters) for use on transcripts Enum Combinatorics

c. Lecture/Discussion hours per week 3 d. Laboratory hours per week 0

e. Studio hours per week 0 f. Credits 3

g. Course description
See attached.

h. Prerequisites (if any)
A graduate course in linear algebra or consent of instructor.

May be repeated to a maximum of _____ (if applicable)

4. To be cross-listed as

Prefix and Number Signature, Chairman, cross-listing department

5. Effective Date Spring ~~2003~~ 2004 (semester and year)

6. Course to be offered Fall Spring Summer

7. Will the course be offered each year? Yes No
(Explain if not annually)

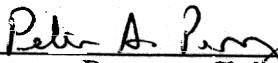
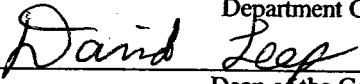
8. Why is this course needed?

A proposed change in emphasis of one of the mathematics doctoral prelim sequences
from optimization to discrete mathematics.

9. a. By whom will the course be taught? Discrete mathematics group faculty members.

b. Are facilities for teaching the course now available? Yes No
If not, what plans have been made for providing them?

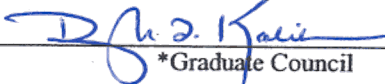
Signatures of Approval:


 Department Chair

 Dean of the College

10/11/02
 Date
 DEC 13 2002
 Date
 NOV 27 2002
 Date of Notice to the Faculty

*Undergraduate Council

Date

*University Studies

 *Graduate Council

Date
 4/25/03
 Date

*Academic Council for the Medical Center

Date

*Senate Council (Chair)

Date of Notice to University Senate

*If applicable, as provided by the Rules of the University Senate

ACTION OTHER THAN APPROVAL

Enumerative Combinatorics
Math 614

References:

1. Richard P. Stanley, Enumerative combinatorics. Vol. 2. Cambridge Studies in Advanced Mathematics, 62. Cambridge University Press, Cambridge, 1999.
2. J. H. van Lint and R. M. Wilson, A course in combinatorics. Second edition. Cambridge University Press, Cambridge, 2001.
3. Herbert S. Wilf, Generatingfunctionology. Second edition. Academic Press, Inc., Boston, MA, 1994.

Course Description:

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ARTS AND SCIENCES COLLEGE COUNCIL/CURRICULUM COMMITTEE

INVESTIGATOR REPORT

INVESTIGATING BODY Area A, Steven Yates
(Area, Area Chair)

COURSE, MAJOR or DEGREE MA 614
(department or college)

DATE FOR COUNCIL REVIEW 12/13/02

CATEGORY NEW, CHANGE, DROP

INSTRUCTIONS: This completed form will accompany the course application to the Graduate/Undergraduate Council(s) in order to avoid needless repetition of investigation. The following questions are included as an outline only. Be as specific and as brief as possible. If the investigation was routine, please indicate this. The term "course" is used to indicate one course, a series of courses or a program, whichever is in order. Return the form to the Associate Dean, 231 Patterson Office Tower for forwarding to the other Council(s). ATTACH SUPPLEMENT IF NEEDED.

List any modifications made in the course proposal as submitted originally and why.

NONE

2. If no modifications were made, review considerations that arose during the investigation and the resolutions.

NONE

3. List contacts with program units on the proposal and the considerations discussed therein.

NONE

4. Additional information as needed.

NONE

5. A&S Area A, Natural & Mathematical Sciences Curriculum Committee Recommendation:

APPROVE APPROVE WITH RESERVATION, OR DISAPPROVE

6. A&S Council Recommendation:

APPROVE APPROVE WITH RESERVATION, OR DISAPPROVE

7. *Steven Yates*
A&S Council Investigator, Dr. Steven Yates

Date: 12/13/02