

"BOLDLY GO WHERE NO ONE HAS EVER GONE BEFORE"
(CAPT'N PICARD, 2537 A.D.)
A "GE" COURSE IN GEOM. COMB.

- ISSUES**
- "SELLING" THE COURSE TO THE DEAN, CHAIR...
 - ATTRACTING STUDENTS TO TAKE IT
 - KEEPING STUDENTS IN CLASS AFTER FIRST LECTURE (DON'T SCARE THEM, YET...)
 - CHANGE THE TITLE (TROPICAL WOULD BE NICE, BUT ALREADY USED)
 - FINDING A GOOD TEXTBOOK; ALTERNATIVE: WRITE ONE.
 - ASSESSMENT
 - HOW TO IMPLEMENT CALCULUS, TOPOLOGICAL, ETC. ARGUMENTS IN THE LECTURES.

- GOALS**
- STUDENTS SHOULD LEARN CRITICAL THINKING AND REASONING SKILLS
 - STUDENTS SHOULD LEARN "ENOUGH" MATH'L CONCEPTS FOR A GE COURSE (LIKE CALCULUS, STATS, ETC.)
 - FOR THE PROFESSOR: ① ATTRACT FUTURE MAJORS ② INCREASE MATH AWARENESS, POPULARITY...

- MOTIVATIONS**
- FAMOUS QUOTES:
- ① "YOU CAN'T STOP ME FROM DOING THIS"
 - ② "BECAUSE IT IS BEAUTIFUL"
- MANY STUDENTS LIKED GEOMETRY, BUT NOT TRIG, ALGEBRA, CALCULUS IN HIGH SCHOOL.
 - A LOT OF HANDS-ON EXAMPLES (PICTURES, GAMES...) ARE EXCITING
 - THROW IN INCENTIVES FOR TAKING FUTURE CALC., LIN. ALG., DISCP. MATH. ETC. COURSES.
 - TRICK: STUDENTS LEARN MORE MATH'L CONCEPTS THAN THEY EVER WANTED.

YOU GOT THE COURSE: NOW WHAT?

SKETCH OF A SYLLABUS :

TITLE : TROPICAL, EXOTIC, SEXY GEOMETRY

(A) GEOMETRY OF POINTS IN THE PLANE ($N=2$)

- POINTS , SETS OF POINTS , COORDINATES , COLORING , METHODS OF PROOF .
- FIGURES w/ POINTS : POLYGONS , ETC .
- COUNTING , COMBINATORICS .
- START w/ "FRANCIS' PROBLEM LIST" , SOLVE ONE AT A TIME , SET GOALS .
- CONVEXITY , APPROPRIATE PROOFS OF "CONVEX THEOREMS" .
- COLORING , TRIANGULATIONS , ETC .

(B) GEOMETRY OF SPACE ($N=3$ or $N \geq 3$)

- POLYTOPES , ETC .
- EXTEND RESULTS IN PART (A)
- SPECIFIC RESULTS TO $N=3$.
- HIGHER DIMENSIONS .

(C) APPLICATIONS TO OTHER DISCIPLINES

- INTEGRATED IN (A) & (B)
- BIOLOGY : PHYLO TREES
- ETC .
- ECONOMICS