UNIVERSITY OF CALIFORNIA, DAVIS

BERKELEY • DAVIS • IRVINE • MERCED • RIVERSIDE • SAN DIEGO • SAN FRANCISCO

SANTA BARBARA • SANTA CRUZ

DEPARTMENT OF MATHEMATICS

One Shields Avenue
Davis, California 95616-8633
Phone: (530) 752-0821
Fax : (530) 752-6635
http://www.math.ucdavis.edu

February 25, 2019

TO: Department Chairs and Vice-Chairs
FROM: Monica Vazirani, Vice-Chair for Undergraduate Matters, Department of Mathematics
Re: Changes to prerequisites involving MAT 22A/B

Dear Chairs and Vice-Chairs,

You are receiving this letter because your department has a course with a prerequisite of MAT 022A: Linear Algebra (3 units) or MAT 022B: Differential Equations (3 units). This letter requests that you change prerequisite listings for MAT 022A to reflect the new course series MAT/BIS 027A: Linear Algebra with Applications to Biology (4 units) and MAT/BIS 027B: Differential Equations with Applications to Biology (4 units), which includes 3 hours per week of lecture and a weekly 2 hour computational modeling laboratory. These courses were developed to provide the rigorous training in mathematics required of science and engineering students with interests in biological applications and/or computational modeling. The relevant committees in the Department of Mathematics have determined that MAT/BIS 027A is academically equivalent for the purpose of prerequisites to MAT 022A and that MAT/BIS 027B is academically equivalent for the purpose of prerequisites to MAT 022B.

The math department is updating all of its own course prerequisites to reflect this change and requests that you do the same, specifically changing prerequisites of "MAT 022A" or "MAT 022A and MAT 022AL" to "[ditto] or MAT/BIS 027A" and changing prerequisites of "MAT 022B" to "[ditto] or MAT/BIS 027B". If you need to make changes in your catalogue listings as a result, please take careful note of the change of units from 3 to 3-4.

The catalog listings are provided below and we have attached syllabi for MAT 022A, 022B, 027A (and labs), 027B (and labs) to this letter:

MAT 027A—Linear Algebra with Applications to Biology (4)
Lecture—3 hour(s); Laboratory—2 hour(s). Prerequisite(s): MAT 017C C- or better or MAT 021C C- or better or MAT 021CH C- or better.Introduction to linear algebra with biological, medical, and bioengineering applications. Matrix algebra, vector spaces, orthogonality, determinants, eigenvalues, eigenvectors, principal component analysis, singular value decomposition, and linear transformations. Computer labs cover mathematical and computational techniques for modeling biological systems. Only one unit of credit for students who have completed MAT 022A.(Same course as BIS 027A.) GE credit: SE. Effective: 2019 Winter Quarter.

MAT 027B—Differential Equations with Applications to Biology (4)
Lecture—3 hour(s); Laboratory—2 hour(s). Prerequisite(s): MAT 027A C- or better or (MAT 022A C- or better, (MAT 022AL C- or better or ENG 006 C- or better or EME 005 C- or better)). Solutions of differential equations with biological, medical, and bioengineering applications. First and second order linear equations, phase plane analysis, nonlinear dynamics, Laplace transforms, and the diffusion equation. Computer labs cover mathematical and numerical techniques for modeling biological systems. Only one unit of credit for students who have completed MAT 022B. (Same course as Cross-listed with BIS 027B.) GE credit: SE. Effective: 2019 Spring Quarter.

Please contact <studentservices@math.ucdavis.edu>, Javier Arsuaga <jarsuaga@ucdavis.edu>, or Monica Vazirani <mjvazirani@ucdavis.edu> if you have any questions.

Sincerely,

Abigail Thompson
Professor and Chair
Department of Mathematics
University of California, Davis

Monica Vazirani
Professor and Vice-Chair for Undergraduate Matters
Department of Mathematics
University of California, Davis