Department of Mathematics _____
College of Arts and Sciences

Faculty

Troy Riggs (1993, 2000). Professor of Mathematics and Department Chair. B.S., University of South Dakota; M.A., and Ph.D., University of Nebraska-Lincoln.

Bryan Dawson (1998). Professor of Mathematics. B.S. and M.S., Pittsburg State University; Ph.D., University of North Texas.

Richard Dehn (1969). Associate Professor of Mathematics. B.S., University of Memphis; M.A.T., Purdue University; M.S., University of Arkansas, Additional study, University of Wisconsin, University of Arkansas, University of Missouri-Rolla.

Chris Hail (1995). Professor of Mathematics. B.S., Campbellsville College; M.A., Morehead State University; Ed.D., University of Kentucky.

Dwayne Jennings (1981). Associate Professor of Mathematics and Computer Science. B.S., Union University; M.S. (Mathematics) and M.S. (Computer Science), University of Memphis.

Matt Lunsford (1993). Professor of Mathematics. B.G.S., Louisiana Tech University; M.S., University of Nebraska; Ph.D., Tulane University.

Don Rayburn Richard (1983). Associate Professor of Mathematics. B.S., University of Memphis; M.A., University of Missouri; M.B.A., University of Colorado.

Mission Statement

Union's mathematics program seeks to further students in their quest for increased understanding of Creation and

360. Numerical Analysis (3) As Needed
Prerequisite: CSC 115 or 255, MAT 205 and 213.
Numerical computations, roots of equations, simultaneous nonlinear and linear simultaneous equations, numerical integration and differentiation, and power series calculations.

400. SOA Exam P Preparation (1) As Needed
Prerequisite: MAT 213 and 305.
Application of calculus and statistics to risk management problems relevant to the Society of Actuaries first exam. Sitting for the SOA Exam P is required for successful completion of the course. Pass/Fail.

401. Actuarial Mathematics I (3) As Needed
Prerequisite: MAT 400
Measures of interest, annuities-certain, amortization schedules, sinking funds and bonds. Introduction to life tables and life annuities.

402. Actuarial Mathematics II (3) As Needed
Prerequisite: 401.
Actuarial models, including survival models, stochastic processes, and loss models. Applications to insurance and annuity contracts.

405. Mathematical Statistics (3) As Needed
Prerequisites: MAT 305 & 212.
A calculus-based introduction to the theory of probability and statistics. Topics include conditional probability and independence, random variables, mathematical expectations, discrete and continuous distributions, central limit theorem, and sampling theory.

411. Introduction to Analysis (3) F—Odd Years or As Needed
Prerequisite: MAT 205 and 213.
A rigorous inquiry into sequences, limits, continuity, differentiation, and integration.

413. College Geometry (3) F—Odd Years; Su—Even Years As Needed
Prerequisite: MAT 205 and 212.
Topics include axiomatic foundations of Euclidean and non-Euclidean geometry, models for incidence geometries, and development of theorems in the geometries of the Euclidean plane and the hyperbolic plane.

415. Abstract Algebra (3) F—Even Years
Prerequisite: MAT 205 and 212.
An introduction to number theory, group theory, and ring theory. Topics include divisibility in the integers, permutation groups, homomorphisms, normal subgroups and quotient groups, LaGrange's Theorem, ideals, and polynomial rings.

498. Mathematics Seminar (2) F
Prerequisite: 20 hours of MAT course work and Senior standing.
The setting for administering the Major Field Test, for addressing those areas of mathematics for which prior assessment indicates the need for improvement, for providing seniors an opportunity to demonstrate their awareness of the abstract nature of mathematics and its unifying principles through oral and written presentations, and for discussion of current mathematical research. The course may be modified at the discretion of the department.

* Six hours maximum may be applied toward graduation from MAT 111-2, 116.
@ Does not apply toward the major or minor.

179-279-379-479. External Domestic Study Programs (1-3) As Needed
All courses and their applications must be defined and approved prior to registering.

180-280-380-480. Study Abroad Programs (1-4)
All courses and their application must be defined and approved prior to travel.

195-6-7. Special Studies (1-4)
295-6-7. Special Studies (1-4)
Lower-level group studies which do not appear in the regular departmental offerings.

395-6-7. Special Studies (1-4)
Upper-level group studies which do not appear in the regular departmental offerings.

495-6-7. Independent Study (1-4)

Individual research under the guidance of a faculty member(s).

497-8-9. Seminar (1-3)

To be used at the discretion of the department.