MATH 105. Quantitative Reasoning - QR 3 Units
Term Typically Offered: Fall, Spring, Summer
Prerequisite(s): Appropriate placement score or equivalent coursework.
Description: Use of mathematical modeling to solve practical problems. Applications include management science, social choice, population growth, and personal finance.
Note: Does not count toward mathematics major or minor.
Note: Intended for non-science majors.
Note: Previously offered as "Contemporary Mathematics".

For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)

MATH 106. Applied Mathematics for Understanding Science and Evolution - S, QR 4 Units
Term Typically Offered: Fall Only
Prerequisite(s): Appropriate placement score or equivalent coursework.
Description: Any understanding of human evolution requires knowing how each fact is supported by verifiable data, and mathematics is a primary tool for any scientific investigation of the evolution of human variation. This class will develop and apply mathematical techniques and models used to investigate and describe the distribution of human biological variation.
Note: Cross-listed with ANTH 111.

For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)

MATH 107. Finite Mathematics 3 Units
Term Typically Offered: Fall, Spring, Summer
Prerequisite(s): Appropriate placement score or equivalent coursework.
Description: Systems of linear equations and inequalities, algebra of sets, counting and probability theory, vectors and matrices, and applications.
Note: Does not count toward mathematics major or minor.

For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)

MATH 109. Elementary Statistics - QR 3 Units
Term Typically Offered: Fall, Spring
Prerequisite(s): Appropriate placement score or equivalent coursework.
Description: Descriptive statistics, normal and binomial distributions, inferential statistics, contingency tables, correlation and regression, computer laboratory.
Note: Does not count toward mathematics major or minor.

For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)

MATH 111. College Algebra - QR 3 Units
Term Typically Offered: Fall, Spring, Summer
Prerequisite(s): Appropriate placement score or equivalent coursework.
Fee: An additional $97.45 is charged for this course.
Description: Advanced topics in algebraic and rational expressions and factoring; polynomial, rational, exponential, and logarithmic functions; applications.
Note: Does not count toward mathematics major or minor.

For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)

MATH 112. Trigonometry 3 Units
Term Typically Offered: Fall, Spring, Summer
Prerequisite(s): Appropriate placement score or equivalent coursework.
Description: Trigonometric functions through angular and circular definitions. Identities, graphing, inverse trigonometric functions, analytic geometry, applications.
Note: Does not count toward mathematics major or minor.
Note: Credit not allowed for both MATH 112 and MATH 190 or ENGR 190.

For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)

MATH 151. Mathematics for Elementary Education I 3 Units
Term Typically Offered: Fall, Spring, Summer
Prerequisite(s): Appropriate mathematics placement.
Description: Problem solving and number systems, including numeration systems, integers, rational, and real numbers, and elementary number theory.
Note: Recommended only for majors in elementary or middle grades education.
Note: Does not count towards mathematics major or minor.

For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)

MATH 152. Mathematics for Elementary Education II 3 Units
Term Typically Offered: Fall, Spring, Summer
Prerequisite(s): MATH 151.
Description: Geometry, patterns, elementary statistics, discrete probability and counting.
Note: Recommended only for majors in elementary or middle grades education.
Note: Does not count towards mathematics major or minor.

For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)
MATH 180. Elements of Calculus - QR  3 Units
Term Typically Offered: Fall, Spring, Summer
Prerequisite(s): Appropriate placement score or equivalent coursework.
Description: Differential and integral calculus of polynomial, logarithmic, and exponential functions with applications.
Note: Does not count toward mathematics major or minor.
Note: Credit not allowed for both MATH 180 and MATH 205.

For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)

MATH 190. Precalculus - QR  4 Units
Term Typically Offered: Fall, Spring, Summer
Prerequisite(s): Appropriate placement score or equivalent coursework.
Fee: An additional $97.13 is charged for this course.
Description: Advanced topics in algebraic and rational expressions, factoring, exponents, and radicands; theory of equations and inequalities; functions. Analytic geometry, trigonometry.
Note: Does not count toward mathematics major.
Note: Credit not allowed for both MATH 190 and ENGR 190.
Note: MATH 190 normally prepares student for MATH 205.

For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)

MATH 205. Calculus I - QR  4 Units
Term Typically Offered: Fall, Spring, Summer
Prerequisite(s): MATH 112 or MATH 190 or MATH 205 or ENGR 101.
Fee: An additional $105.00 is charged for this course.
Description: First course in differential and integral calculus of single variable functions. Analytic geometry, constructions, and transformations. Manipulative, models, and technology used in laboratory setting. Intended for prospective elementary and middle school teachers.
Note: Credit not granted for both MATH 180 and MATH 205.

For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)

MATH 206. Calculus II  4 Units
Term Typically Offered: Fall, Spring, Summer
Prerequisite(s): MATH 205 or ENGR 101.
Description: Continuation of MATH 205; Introduction to infinite series.
Note: Credit will not be granted for both MATH 206 and ENGR 102.

For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)

MATH 301. Calculus III  4 Units
Term Typically Offered: Fall, Spring, Summer
Prerequisite(s): MATH 206 or ENGR 102.
Description: Differential and integral calculus of functions of several variables, vector analysis, solid analytic geometry, introduction to topics in differential equations.
Note: Credit will not be granted for both MATH 301 and ENGR 201.

For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)

MATH 311. Introduction to Higher Math  3 Units
Term Typically Offered: Fall, Spring
Prerequisite(s): MATH 205 or ENGR 101.
Description: Introduction to abstract mathematics with particular attention to developing proof-reading and proof-writing skills. The basics of set theory, functions, relations, number systems, countability, sequences and their convergence, and the complex plane.

For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)

MATH 325. Introduction to Linear Algebra  3 Units
Term Typically Offered: Fall, Spring
Prerequisite(s): MATH 180 or MATH 205 or ENGR 101.
Description: Systems of equations, matrix algebra, linear independence, n-dimensional vector spaces, linear transformations, eigenvalues and eigenvectors.
Note: Credit will not be granted for both MATH 325 and ENGR 330.

For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)

MATH 349. Statistics and Probability for Teachers  3 Units
Prerequisite(s): Completion of general education mathematics requirement.
Description: Descriptive statistics, data analysis and collection, probability and expected value, introduction to statistical inference. Intended for prospective elementary and middle school teachers.
Note: Does not count toward major or minor in mathematics.
Note: Students may not receive credit for both this course and any of the following: MATH 109, MGMT 201, SOC 301, PSYC 312, PSYC 316 and PSYC 317, CJ 326.

For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)

MATH 350. Geometric Investigations  3 Units
Term Typically Offered: Fall, Spring
Prerequisite(s): MATH 109, MGMT 201, SOC 301, PSYC 312, PSYC 316 and PSYC 317, CJ 326.
Description: Inductive and deductive investigation of Euclidean geometry, constructions, and transformations. Manipulative, models, and technology used in laboratory setting. Intended for prospective middle school teachers.
Note: Does not count toward major or minor in Mathematics.
Note: Credit will not be granted for both MATH 350 and either MATH 550 or MATH 551.

For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)
MATH 360. Statistical Data Analysis - WR  3 Units
Prerequisite(s): MATH 205 or ENGR 101.
Fee: An additional $60.00 is charged for this course.
Description: Descriptive techniques, inferential techniques, simple and multiple linear regression. Frequent use of statistical computer packages. No previous knowledge of the computer required.
Note: Credit may be applied towards the MAT but not toward any other graduate degree in mathematics.
Note: Approved for the Arts and Sciences upper-level requirement in written communication (WR).

For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)

MATH 372. Theory of Interest  3 Units
Term Typically Offered: Spring Only
Prerequisite(s): MATH 206 or ENGR 102.
Description: Accumulation function and the special cases of simple and compound interest. Nominal and effective interest and discount rates and the force of interest - constant and varying. Valuation of discrete and continuous streams of payments. Determination of yield rates on investments. Application of interest theory to amortization of lump sums, fixed income securities, depreciation mortgages. Covers the interest theory portion of the Examination 2 of the Society of Actuaries and the Casualty Actuarial Society.
Note: Previously offered as MATH 572 (through fall 2018).

For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)

MATH 387. Discrete Mathematics  3 Units
Term Typically Offered: Fall, Spring
Prerequisite(s): MATH 206 or ENGR 102; MATH 325.
Description: Topics may include: Pigeon-hole principle, counting techniques, binomial coefficients, generating functions, stirling and catalan numbers, permutations and graphs.
For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)

MATH 405. Differential Equations  3 Units
Term Typically Offered: Spring Only
Prerequisite(s): MATH 206 or ENGR 102; MATH 325.
Description: Methods of solution of common types of ordinary differential equations.
Note: Credit will not be granted for both MATH 405 and ENGR 205.

For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)

MATH 407. Numerical Analysis  3 Units
Term Typically Offered: Occasionally Offered
Prerequisite(s): MATH 301 and MATH 325; MATH 405 recommended.
Description: Introduction to numerical methods used to approximate equation solutions, functions, integrals, derivatives, and solutions of ordinary differential equations.
Note: Credit will not be granted for both MATH 407 and ENGR 307.

For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)

MATH 430. Practicum in Mathematics Education  1 Unit
Term Typically Offered: Fall, Spring
Prerequisite(s): Selected for Math UTA; grade of B or better in MATH 311 & MATH 325; 3.0 GPA in major; 9 hrs completed in Math major at UofL.
Description: For Mathematics Undergraduate Teaching Assistants (UTAs) who have been selected to participate in the NSF-STEP-funded PRIMES project as peer mentors and undergraduate teaching assistants (UTA) in undergraduate Mathematics courses. This practicum course is intended to provide a pedagogical foundation for successfully engaging with students in the classes to which each UTA is assigned.
Note: May be repeated for a maximum total of 3 credit hours.

For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)

MATH 451. Problem Solving in Number Systems and Discrete Mathematics  3 Units
Term Typically Offered: Spring Only
Prerequisite(s): MATH 151; MATH 180 or MATH 205 or ENGR 101.
Description: Exploration of problem solving techniques and their application to problems in number systems and discrete mathematics. Intended for prospective middle school teachers.
Note: Does not count toward major or minor in mathematics.
Note: Credit will not be given for both MATH 451 and MATH 311.

For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)

MATH 491. Independent Study  1-3 Units
Term Typically Offered: Fall, Spring
Prerequisite(s): MATH 311; MATH 451; MATH 405; MATH 407; MATH 325.
Description: Opportunity for students to explore, with the guidance of faculty, one or more topics in Mathematics that are not covered under the regularly offered curriculum.
For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)

MATH 493. Cooperative Internship in Mathematics  1-3 Units
Term Typically Offered: Occasionally Offered
Prerequisite(s): 15 hours of Mathematics (MATH 205 and above); approval of department chair; and Junior standing.
Description: An individually-arranged course combining work experience with a related academic project.
Note: BS students may apply a maximum of 3 hours in applications area requirement.
Course Attribute(s): CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.

For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
<th>Term Typically Offered</th>
<th>Prerequisite(s)</th>
<th>Description</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 499.</td>
<td>Senior Honors Thesis - WR</td>
<td>3</td>
<td>Term Typically Offered</td>
<td>Occasionally</td>
<td>Independent investigation of a topic in mathematics, undertaken by a student</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>and faculty consent.</td>
<td>with at least 90 earned credits/senior-level status.</td>
<td></td>
</tr>
<tr>
<td>MATH 501.</td>
<td>Introduction to Analysis I - CUE</td>
<td>3</td>
<td>Term Typically Offered</td>
<td>Spring Only</td>
<td>Foundations of the real number system, sequences and series, topology of</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>the line, continuity, differentiation of functions of one variable.</td>
<td></td>
</tr>
<tr>
<td>MATH 502.</td>
<td>Introduction to Analysis II</td>
<td>3</td>
<td>Term Typically Offered</td>
<td>Spring Only</td>
<td>Riemann integration on the line, sequences and series of functions, uniform</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>convergence, metric spaces.</td>
<td></td>
</tr>
<tr>
<td>MATH 505.</td>
<td>Introduction to Partial Differential Equations</td>
<td>3</td>
<td>Term Typically Offered</td>
<td>Fall, Summer</td>
<td>Techniques for solving standard heat, wave, and potential equations,</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>including discussion of Fourier analysis techniques.</td>
<td></td>
</tr>
<tr>
<td>MATH 507.</td>
<td>Fourier Analysis</td>
<td>3</td>
<td>Term Typically Offered</td>
<td>Spring Only</td>
<td>Introduction to Fourier series and transforms.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>For class offerings for a specific term, refer to the Schedule of Classes</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>(<a href="http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)">http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</a></td>
<td></td>
</tr>
<tr>
<td>MATH 511.</td>
<td>Complex Analysis I</td>
<td>3</td>
<td>Term Typically Offered</td>
<td>Occasionally</td>
<td>Geometry of the complex plane, analytic and meromorphic functions, linear</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>and faculty consent.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>fractional transformations, Cauchy's Theorem and the Residue Theorem.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Emphasizes computational aspects of the course topics.</td>
<td></td>
</tr>
<tr>
<td>MATH 512.</td>
<td>Complex Analysis II</td>
<td>3</td>
<td>Prerequisite(s): MATH 511.</td>
<td></td>
<td>A continuation of MATH 511, including deeper properties of analytic,</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>meromorphic, harmonic functions and conformal mappings.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Emphasizes theoretical aspects of the course topics.</td>
<td></td>
</tr>
<tr>
<td>MATH 520.</td>
<td>Theory of Numbers</td>
<td>3</td>
<td>Prerequisite(s): MATH 206 or ENGR 102; MATH 311; MATH 325 or</td>
<td>A study of the integers and their divisibility properties.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>consent of instructor.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MATH 521.</td>
<td>Modern Algebra I</td>
<td>3</td>
<td>Term Typically Offered</td>
<td>Fall, Spring</td>
<td>An introduction to the theory of groups, rings, integral domains, and</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>fields.</td>
<td></td>
</tr>
<tr>
<td>MATH 522.</td>
<td>Modern Algebra II</td>
<td>3</td>
<td>Term Typically Offered</td>
<td>Spring Only</td>
<td>Continuation in greater depth of topics introduced in MATH 521; introduction</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>to theory of ideals, field extensions, and abstract vector spaces.</td>
<td></td>
</tr>
<tr>
<td>MATH 535.</td>
<td>Modeling I</td>
<td>3</td>
<td>Prerequisite(s): MATH 325 or MATH 405 or equivalent.</td>
<td>Introduction to mathematical modeling of discrete and continuous dynamical</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>systems.</td>
<td></td>
</tr>
<tr>
<td>MATH 536.</td>
<td>Modeling II</td>
<td>3</td>
<td>Prerequisite(s): MATH 536.</td>
<td></td>
<td>Advanced mathematical modeling of discrete and continuous dynamical systems.</td>
<td></td>
</tr>
</tbody>
</table>
MATH 545. Introduction to Fractal Geometry 3 Units
Prerequisite(s): MATH 301 and MATH 325; MATH 501 recommended.
Description: Recursively defined sets and self-similarity; metric spaces and iterated function systems; topological, fractal, and Hausdorff dimensions.

For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)

MATH 550. Advanced Euclidean Geometry 3 Units
Term Typically Offered: Occasionally Offered
Prerequisite(s): MATH 206 or ENGR 102; MATH 311; MATH 325 or consent of instructor.
Description: Theory of Euclidean geometry contrasted with non-Euclidean from both the axiomatic and algebraic approach. Of special value to secondary teachers.
Note: Credit may not be applied toward any other graduate degree in mathematics.

For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)

MATH 551. Geometry 3 Units
Term Typically Offered: Spring Only
Prerequisite(s): MATH 206 or ENGR 102; MATH 311; MATH 325 or consent of instructor.
Description: Study of projective spaces, transformations and invariants. Introduction to related geometries, such as affine, elliptic, and hyperbolic.
For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)

MATH 556. Mathematical Models in Molecular Biology 3 Units
Prerequisite(s): MATH 205 or instructor consent.
For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)

MATH 558. Mathematical Models in Molecular Biology 3 Units
Prerequisite(s): MATH 301 and MATH 325; MATH 501 recommended.
Description: Recursively defined sets and self-similarity; metric spaces and iterated function systems; topological, fractal, and Hausdorff dimensions.

For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)

MATH 551. Geometry 3 Units
Term Typically Offered: Occasionally Offered
Prerequisite(s): MATH 206 or ENGR 102; MATH 311; MATH 325 or consent of instructor.
Description: Study of projective spaces, transformations and invariants. Introduction to related geometries, such as affine, elliptic, and hyperbolic.
For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)

MATH 556. Mathematical Models in Molecular Biology 3 Units
Prerequisite(s): MATH 205 or instructor consent.
For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)

MATH 558. Mathematical Models in Molecular Biology 3 Units
Prerequisite(s): MATH 301 and MATH 325; MATH 501 recommended.
Description: Recursively defined sets and self-similarity; metric spaces and iterated function systems; topological, fractal, and Hausdorff dimensions.

For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)

MATH 562. Mathematical Statistics 3 Units
Prerequisite(s): MATH 301.
Description: Random samples and statistics, point estimation, sufficiency and completeness, confidence regions, classical theory of hypothesis testing, linear regression, nonclassical procedures.
For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)

MATH 566. Probability Models 3 Units
Prerequisite(s): MATH 561.
Description: Finite probability models, Markov chains, renewal and reliability theory, Brownian motion, stochastic differential equations.
For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)
MATH 587. Discrete Mathematics for MAT students 3 Units
Prerequisite(s): MATH 206 or ENGR 102; MATH 325.
Description: Topics include: Pigeon-hole principle, counting techniques, binominal coefficients, generating functions, stirling and catalan numbers, permutations and graphs.
Note: Does not count towards the mathematics major or minor.
Note: Credit may be applied toward the MAT degree but not towards any other graduate degree in mathematics.
Note: Credit not allowed for both MATH 387 and MATH 587.

For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)

MATH 590. History of Mathematics - WR 3 Units
Prerequisite(s): 500-level course in math (except MATH 560).
Description: Mathematical history from Mesopotamia to present. Emphasis on doing mathematics, identifying the growth of mathematical concepts and studying prominent mathematicians.
Note: Approved for the Arts and Sciences upper-level requirement in written communication (WR).

For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)

MATH 591. Selected Topics in Mathematics 1-3 Units
Prerequisite(s): Announced in Schedule of Courses.
Description: An examination of one or more topics in mathematics not usually treated in a regularly offered course.
For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)