1. Submitting College:  COST

2. Department(s) Generating The Proposal:  Engineering Technology & Mathematics  
   Engineering Technology & Mathematics (if needed)

3. Proposal Title:  Mathematics Program Course Pre Requisite Revisions

4. Course Number(s):  Math 1113(Pre Calculus), MATH 1501(Pre Calculus For Engineers), MATH  
   2201(Elementsary Statistics), MATH 2301(Introduction To Discrete Mathematics), MATH 2511(Calculus II For  
   Engineers, MATH 2521 (Calculus III For Engineers), MATH 3101(Linear Algebra), MATH 3301(Differential  
   Equations), MATH 3401(Modern Geometry), MATH 3501(Numerical Analysis), MATH 3602(Linear and Discrete  
   Mathematics), MATH 4201(Analysis I), MATH 4311 Probability and Statistics II, MATH 4421(Regression Analysis),  
   MATH 4901(Senior Seminar)

5. Course Title(s):  see above

6. Effective Date:  Spring  Year:  2012

7. Brief Summary of Proposal:  This proposal is being submitted to modify the pre requisites of selected courses  
   in the Civil Engineering Technology Program.

8. Type of Proposal:  Course Change  If other, please describe:  
   Click here to enter text.

9. Impact on Library Holdings
   Existing:  
   Additional:  
   Deletions:  
   Click here to enter text.

10. Impact on Existing Programs:  
    Click here to enter text.

11. Additional Resources Required
    Personnel:  
    Non-personnel:  
    Click here to enter text.

12. Approvals:
   - Department Curriculum Committee  
     Signature_________________________ Date________________

   - Department Chair  
     Signature_________________________ Date________________

   - College Curriculum Committee  
     Signature_________________________ Date________________

   - College Dean  
     Signature_________________________ Date________________

   - Vice President of Academic Affairs  
     Signature_________________________ Date________________  
     (Chair of the New Programs and Curriculum Committee)

   - Faculty Senate  
     Signature_________________________ Date________________
1. **Course Number**
   - Current: MATH 1113
   - New: Click here to enter text.

2. **Course Title**
   - Current: Pre Calculus
   - New: Click here to enter text.

3. **Catalog Description**
   - Current: A course designed to prepare students for a successful study of calculus. Topics include functions and their graphs, inverse functions, exponential and logarithmic functions, trigonometric functions and their inverses, analytic trigonometry, application of trigonometric functions, fundamentals of analytic geometry, and polar coordinates.
   - New: Click here to enter text.

4. **Rationale:**
   - Change to reflect correct course pre requisites based upon knowledge necessary to enter course.

5. **Library Resource Statement**
   - Existing: Click here to enter text.
   - Additional: Click here to enter text.
   - Deletions: Click here to enter text.

6. **Credit Hours**
   - Current: 3
   - New: Click here to enter text.

7. **Pre-requisites**
   - Current: MATH 1111 or a minimum score of 475 on the SAT
   - New: MATH 1111 or a minimum score of 500 on the SAT or equiv ACT score.
   - Deletions: Click here to enter text.

8. **Syllabus:**
   - Click here to enter text.

9. **Similarity to or Duplication of Existing Courses:**
   - Click here to enter text.

10. **Textbook Change (include title, author and ISBN#)**
    - Current: Click here to enter text.
    - New: Click here to enter text.

11. **Grading Method**
    - Current: Click here to enter text.
    - New: Click here to enter text.
1. **Course Number**
   - Current: MATH 2201
   - New: Click here to enter text.

2. **Course Title**
   - Current: Elementary Statistics
   - New: Click here to enter text.

3. **Catalog Description**
   - Current: Topics include mean, median, range, variance and standard deviation of raw and grouped data, probabilities, correlation, the normal distribution, the t-distribution, statistical inference, including the pooled t-test, the analysis of variance, chi-square test, and regression analysis.
   - New: Click here to enter text.

4. **Rationale:** Change to reflect correct course pre requisites based upon knowledge necessary to enter course.

5. **Library Resource Statement**
   - Existing: Click here to enter text.
   - Additional: Click here to enter text.
   - Deletions: Click here to enter text.

6. **Credit Hours**
   - Current: 3
   - New: Click here to enter text.

7. **Pre-requisites**
   - Current: MATH 1111
   - New: MATH 1113 or MATH 2101
   - Deletions: MATH 1111

8. **Syllabus:** Click here to enter text.

9. **Similarity to or Duplication of Existing Courses:** Click here to enter text.

10. **Textbook Change (include title, author and ISBN#)**
    - Current: Click here to enter text.
    - New: Click here to enter text.

11. **Grading Method**
    - Current: Click here to enter text.
    - New: Click here to enter text.
1. **Course Number**  
   Current: MATH 2301  
   New: Click here to enter text.

2. **Course Title**  
   Current: Introduction to Discrete Math  
   New: Click here to enter text.

3. **Catalog Description**  
   Current: The study of the logical and algebraic relationships between discrete objects. The roots of discrete math lie deep in set theory, directed graphs and relations, functions, combinatorics, logic, Boolean algebra, graph theory, and recurrence relations.  
   New: Click here to enter text.

4. **Rationale:** Change to reflect correct course pre requisites based upon knowledge necessary to enter course.

5. **Library Resource Statement**  
   Existing: Click here to enter text.  
   Additional: Click here to enter text.  
   Deletions: Click here to enter text.

6. **Credit Hours**  
   Current: 3  
   New: Click here to enter text.

7. **Pre-requisites**  
   Current: MATH 1113  
   New: MATH 2101  
   Deletions: MATH 1113

8. **Syllabus:** Click here to enter text.

9. **Similarity to or Duplication of Existing Courses:** Click here to enter text.

10. **Textbook Change (include title, author and ISBN#)**  
    Current: Click here to enter text.  
    New: Click here to enter text.

11. **Grading Method**  
    Current: Click here to enter text.  
    New: Click here to enter text.
1. **Course Number**
   - Current: MATH 2511
   - New: Click here to enter text.

2. **Course Title**
   - Current: Calculus II for Engineers
   - New: Click here to enter text.

3. **Catalog Description**
   - Current: Topics include L’Hôpital’s Rule, Improper Integrals, Taylor Approximation, Infinite Series and Power Series, Numeric Integration, Linear Algebra, the Theory of Linear Functions and Equations in Several Variables.
   - New: Click here to enter text.

4. **Rationale:** Change to reflect correct course pre requisites based upon knowledge necessary to enter course.

5. **Library Resource Statement**
   - Existing: Click here to enter text.
   - Additional: Click here to enter text.
   - Deletions: Click here to enter text.

6. **Credit Hours**
   - Current: 4
   - New: Click here to enter text.

7. **Pre-requisites**
   - Current: MATH 2501
   - New: MATH 2501 or MATH 2101
   - Deletions:

8. **Syllabus:** Click here to enter text.

9. **Similarity to or Duplication of Existing Courses:** Click here to enter text.

10. **Textbook Change (include title, author and ISBN#)**
    - Current: Click here to enter text.
    - New: Click here to enter text.

11. **Grading Method**
    - Current: Click here to enter text.
    - New: Click here to enter text.
1. **Course Number**
   - Current: MATH 2521
   - New: Click here to enter text.

2. **Course Title**
   - Current: Calculus III For Engineers
   - New: Click here to enter text.

3. **Catalog Description**
   - Current: Topics included are vector calculus, parametric curves and motion, functions of several variable, Newton’s method in several variables, optimization, differentials, double and triple integrals, vector analysis, line integrals, surface integrals, and the theorems of Green, Gauss, and Stokes.
   - New: Click here to enter text.

4. **Rationale**: Change to reflect correct course pre requisites based upon knowledge necessary to enter course.

5. **Library Resource Statement**
   - Existing: Click here to enter text.
   - Additional: Click here to enter text.
   - Deletions: Click here to enter text.

6. **Credit Hours**
   - Current: 4
   - New: Click here to enter text.

7. **Pre-requisites**
   - Current: MATH 2511
   - New: MATH 2511 or MATH 2111
   - Deletions: Click here to enter text.

8. **Syllabus**: Click here to enter text.

9. **Similarity to or Duplication of Existing Courses**: Click here to enter text.

10. **Textbook Change (include title, author and ISBN#)**
    - Current: Click here to enter text.
    - New: Click here to enter text.

11. **Grading Method**
    - Current: Click here to enter text.
    - New: Click here to enter text.
1. **Course Number**
   - Current: MATH 3101
   - New: Click here to enter text.

2. **Course Title**
   - Current: Linear Algebra
   - New: Click here to enter text.

3. **Catalog Description**
   - Current: Topics include matrix algebra, solutions of linear systems, vectors and vector spaces, linear independence, spanning sets, bases, ranks, determinants, matrix inversion, linear transformations, null space, range, and eigenvalues.
   - New: Click here to enter text.

4. **Rationale**: Change to reflect correct course pre requisites based upon knowledge necessary to enter course.

5. **Library Resource Statement**
   - Existing: Click here to enter text.
   - Additional: Click here to enter text.
   - Deletions: Click here to enter text.

6. **Credit Hours**
   - Current: 3
   - New: Click here to enter text.

7. **Pre-requisites**
   - Current: MATH 2111 or MAT 213
   - New: MATH 2111
   - Deletions: MAT 213

8. **Syllabus**: Click here to enter text.

9. **Similarity to or Duplication of Existing Courses**: Click here to enter text.

10. **Textbook Change (include title, author and ISBN#)**
    - Current: Click here to enter text.
    - New: Click here to enter text.

11. **Grading Method**
    - Current: Click here to enter text.
    - New: Click here to enter text.
1. **Course Number**
   - Current: MATH 3301
   - New: Click here to enter text.

2. **Course Title**
   - Current: Differential Equations
   - New: Click here to enter text.

3. **Catalog Description**
   - Current: Topics include differential equations of the first order and first degree, linear equations, variation of parameters, method of undetermined coefficients, inverse operators, Laplace transforms, systems of differential equations, and applications.
   - New: Click here to enter text.

4. **Rationale:** Change to reflect correct course pre requisites based upon knowledge necessary to enter course.

5. **Library Resource Statement**
   - Existing: Click here to enter text.
   - Additional: Click here to enter text.
   - Deletions: Click here to enter text.

6. **Credit Hours**
   - Current: 4
   - New: Click here to enter text.

7. **Pre-requisites**
   - Current: MATH 2111
   - New: MATH 2121
   - Deletions: MATH 2111

8. **Syllabus:** Click here to enter text.

9. **Similarity to or Duplication of Existing Courses:** Click here to enter text.

10. **Textbook Change (include title, author and ISBN#)**
    - Current: Click here to enter text.
    - New: Click here to enter text.

11. **Grading Method**
    - Current: Click here to enter text.
    - New: Click here to enter text.
1. **Course Number**
   - Current: MATH 3401
   - New: Click here to enter text.

2. **Course Title**
   - Current: Modern Geometry
   - New: Click here to enter text.

3. **Catalog Description**
   - Current: A course designed to give a modern view of geometry, including advanced treatment of standard topics in Euclidean geometry, as well as the study of non-Euclidean systems.
   - New: Click here to enter text.

4. **Rationale:** Change to reflect correct course pre requisites based upon knowledge necessary to enter course.

5. **Library Resource Statement**
   - Existing: Click here to enter text.
   - Additional: Click here to enter text.
   - Deletions: Click here to enter text.

6. **Credit Hours**
   - Current: 3
   - New: Click here to enter text.

7. **Pre-requisites**
   - Current: MATH 2111
   - New: MATH 2121
   - Deletions: MATH 2111

8. **Syllabus:** Click here to enter text.

9. **Similarity to or Duplication of Existing Courses:** Click here to enter text.

10. **Textbook Change (include title, author and ISBN#)**
    - Current: Click here to enter text.
    - New: Click here to enter text.

11. **Grading Method**
    - Current: Click here to enter text.
    - New: Click here to enter text.
1. **Course Number**
   - Current: MATH 3501
   - New: Click here to enter text.

2. **Course Title**
   - Current: Numerical Analysis
   - New: Click here to enter text.

3. **Catalog Description**
   - Current: Topics include solving of linear equations, Gauss-Seidel and Jacobi methods, error analysis, approximating functions by infinite series, iteration techniques, techniques of integration, to include trapezoidal and Simpson’s rules.
   - New: Click here to enter text.

4. **Rationale:**
   - Change to reflect correct course pre requisites based upon knowledge necessary to enter course.

5. **Library Resource Statement**
   - Existing: Click here to enter text.
   - Additional: Click here to enter text.
   - Deletions: Click here to enter text.

6. **Credit Hours**
   - Current: 3
   - New: Click here to enter text.

7. **Pre-requisites**
   - Current: MATH 2111 and CSCI 1302
   - New: MATH 2111
   - Deletions: CSCI 1302

8. **Syllabus:**
   - Click here to enter text.

9. **Similarity to or Duplication of Existing Courses:**
   - Click here to enter text.

10. **Textbook Change (include title, author and ISBN#)**
    - Current: Click here to enter text.
    - New: Click here to enter text.

11. **Grading Method**
    - Current: Click here to enter text.
    - New: Click here to enter text.
1. **Course Number**
   - Current: MATH 3602
   - New: Click here to enter text.

2. **Course Title**
   - Current: Linear and Discrete Mathematics
   - New: Click here to enter text.

3. **Catalog Description**
   - Current: Basics of sequences and rates of growth, counting methods, graph theory and graph algorithms, linear algebra, linear programming, and combinatorial optimization.
   - New: Click here to enter text.

4. **Rationale:** Change to reflect correct course pre requisites based upon knowledge necessary to enter course.

5. **Library Resource Statement**
   - Existing: Click here to enter text.
   - Additional: Click here to enter text.
   - Deletions: Click here to enter text.

6. **Credit Hours**
   - Current: 4
   - New: Click here to enter text.

7. **Pre-requisites**
   - Current: Click here to enter text.
   - New: MATH 2121
   - Deletions:

8. **Syllabus:** Click here to enter text.

9. **Similarity to or Duplication of Existing Courses:** Click here to enter text.

10. **Textbook Change (include title, author and ISBN#)**
    - Current: Click here to enter text.
    - New: Click here to enter text.

11. **Grading Method**
    - Current: Click here to enter text.
    - New: Click here to enter text.
1. **Course Number**  
   Current: MATH 4201  
   New: Click here to enter text.

2. **Course Title**  
   Current: Analysis I  
   New: Click here to enter text.

3. **Catalog Description**  
   Current: Topics include sets and functions, the real number system, elementary topology of the real line, limits of sequence, space of continuous functions, differentiation, and Riemann integration.  
   New: Click here to enter text.

4. **Rationale:** Change to reflect correct course pre requisites based upon knowledge necessary to enter course.

5. **Library Resource Statement**  
   Existing: Click here to enter text.  
   Additional: Click here to enter text.  
   Deletions: Click here to enter text.

6. **Credit Hours**  
   Current: 3  
   New: Click here to enter text.

7. **Pre-requisites**  
   Current: MATH 2121 and MATH 3211  
   New: MATH 3211  
   Deletions: Click here to enter text.

8. **Syllabus:** Click here to enter text.

9. **Similarity to or Duplication of Existing Courses:** Click here to enter text.

10. **Textbook Change (include title, author and ISBN#)**  
    Current: Click here to enter text.  
    New: Click here to enter text.

11. **Grading Method**  
    Current: Click here to enter text.  
    New: Click here to enter text.
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<td>1.</td>
<td>Current: MATH 4311</td>
<td>New: Click here to enter text.</td>
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<th><strong>Course Title</strong></th>
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<td>2.</td>
<td>Current: Probability and Statistics II</td>
<td>New: Click here to enter text.</td>
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<th><strong>Catalog Description</strong></th>
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<td>3.</td>
<td>Current: Topics include sampling theory, statistical inferences, estimation and tests of hypotheses, multivariate distribution, transformation of random variables, conditional and marginal distributions, and Bayesian estimation.</td>
<td>New: Click here to enter text.</td>
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<th><strong>Rationale:</strong></th>
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<td>4.</td>
<td>Change to reflect correct course prerequisites based upon knowledge necessary to enter course.</td>
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<td>6.</td>
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<td>New: Click here to enter text.</td>
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<th><strong>Pre-requisites</strong></th>
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<td>7.</td>
<td>Current: MATH 2121 and MATH 3201</td>
<td>New: MATH 3201</td>
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<th><strong>Syllabus:</strong></th>
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<td>8.</td>
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<th><strong>Similarity to or Duplication of Existing Courses:</strong></th>
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<th><strong>Textbook Change (include title, author and ISBN#)</strong></th>
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<td>10.</td>
<td>Current: Click here to enter text.</td>
<td>New: Click here to enter text.</td>
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<th><strong>Grading Method</strong></th>
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<tr>
<td>11.</td>
<td>Current: Click here to enter text.</td>
<td>New: Click here to enter text.</td>
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</table>
1. **Course Number**
   - Current: MATH 4421
   - New: Click here to enter text.

2. **Course Title**
   - Current: Regression Analysis
   - New: Click here to enter text.

3. **Catalog Description**
   - Current: Topics include matrix algebra, simple linear regression, residual analysis techniques, multiple regression, nonlinear regression, dummy variables, and influence statistics.
   - New: Click here to enter text.

4. **Rationale**: Change to reflect correct course pre requisites based upon knowledge necessary to enter course.

5. **Library Resource Statement**
   - Existing: Click here to enter text.
   - Additional: Click here to enter text.
   - Deletions: Click here to enter text.

6. **Credit Hours**
   - Current: 3
   - New: Click here to enter text.

7. **Pre-requisites**
   - Current: MATH 3101 or MAT 319, and MATH 3201 or MAT 217
   - New: MATH 3101 or MATH 4311
   - Deletions: Click here to enter text.

8. **Syllabus**: Click here to enter text.

9. **Similarity to or Duplication of Existing Courses**: Click here to enter text.

10. **Textbook Change (include title, author and ISBN#)**
    - Current: Click here to enter text.
    - New: Click here to enter text.

11. **Grading Method**
    - Current: Click here to enter text.
    - New: Click here to enter text.
1. **Course Number**
   - Current: MATH 4901
   - New: Click here to enter text.

2. **Course Title**
   - Current: Senior Seminar
   - New: Click here to enter text.

3. **Catalog Description**
   - Current: A course to develop students’ use of mathematical skills and a chance to explore a mathematical concept in-depth.
   - New: Click here to enter text.

4. **Rationale:** Change to reflect correct course pre requisites based upon knowledge necessary to enter course.

5. **Library Resource Statement**
   - Existing: Click here to enter text.
   - Additional: Click here to enter text.
   - Deletions: Click here to enter text.

6. **Credit Hours**
   - Current: 1-3
   - New: Click here to enter text.

7. **Pre-requisites**
   - Current: Click here to enter text.
   - New: Junior Standing
   - Deletions: Click here to enter text.

8. **Syllabus:** Click here to enter text.

9. **Similarity to or Duplication of Existing Courses:** Click here to enter text.

10. **Textbook Change (include title, author and ISBN#)**
    - Current: Click here to enter text.
    - New: Click here to enter text.

11. **Grading Method**
    - Current: Click here to enter text.
    - New: Click here to enter text.