INDU   155   OSHA Safety 10
Reading Placement Test Level: None
Prerequisite: None
Credit Hours: 1
This course will include OSHA standards assuring proper safety techniques for all types of circuits and components.

INDU   167   Fundamentals of Electronics DC/AC Lab
Prerequisite: Enrolled in INDU 125 Fundamentals of Electronics I w/Lab
Credit Hours: 3
Provides a fundamental knowledge of analysis techniques used to solve for current, voltage, wattage, resistance, and impedance invarious AC Circuits.

INDU   168   Electronic Devices Lab
Prerequisite: INDU 125 Fundamentals of Electronics DC/AC or Instructor's permission, INDU 167 Fundamentals of Electronics DC/ AC Lab or Instructor's permission, Co-enrolled in, or successful completion of INDU 123 Electronic Devices
Credit Hours: 3
The course will include DC Power Supplies, Diodes, Transistors, Amplifiers, Troubleshooting, Operational Amplifiers, Oscillators, Integrated Circuits, Thyristors, Switch Mode Regulators, and AM/FM Radio Circuits.

INDU   169   Digital Logic Circuits Lab
Prerequisite: INDU 125 Fundamentals of Electronics I-DC w/Lab or Instructor's Permission, INDU 167 Fundamentals of Electronics DC/AC Lab or Instructor's Permission, and Co-enrolled in, or successful completion of INDU 127 Digital Logic Circuits, Co-enrolled in, or successful completion of INDU 155 OSHA Safety 10
Credit Hours: 2
This course will provide lab practices of course INDU 127 with building block circuits in logic systems and computers in a hands-on environment. Small scale IC' are used to learn the basic fundamentals of these systems and subsystems. Analysis techniques are taught to build the student's ability to troubleshoot. Students will also successfully obtain an OSHA 10 certificate from an online source during the course.

INDU   210   Computer Aided Drafting & Design
Prerequisite: INDU 131 Engineering Graphics
Credit Hours: 3
This course will include the use of computer aided design software to generate complex 3-D geometry for the purpose of communicating the following: manufacturing information, detail design information, dimensioning and tolerance data, and surface finish. This course will teach the student more advanced drafting skills. It will take the skills developed in Engineering Graphics I and further develop those skills in the art of drafting. The student will be expected to develop acceptable skills in the art of drafting. Additionally, the following areas will be covered: geometric tolerances, auxiliary views, threads and fasteners, assembly and working drawings, the design process, and pictorial drafting techniques.

Mathematics

MATH 95 Beginning Algebra with Review
Prerequisite: Placement Test Recommendation
Credit Hours: 4
This course will build skills in basic algebra concepts, confidence, and skills to successfully master math classes, including strategies to reduce math anxiety improve test taking skills. Topics covered in the course will include the basic language and terms of algebra, rules for signed numbers, techniques for solving linear, quadratic, and literal equations rules and properties for exponents as applied to algebraic expressions and the graphing and solving of linear equations and linear systems in two unknowns. (Nontransferable)

MATH 96 (1717)   Beginning Algebra
Prerequisite: Placement Test Recommendation
Credit Hours: 3
This course will build skills in basic algebra concepts. Topics covered in the course will include the basic language and terms of algebra, rules for signed numbers, techniques for solving linear, quadratic, and literal equations, rules and properties of exponents as applied to algebraic expressions, and the graphing and solving of linear equations and linear systems in two unknowns. (Non transferable)

MATH 100 (1718)   Intermediate Algebra   KRSN MAT0990**
Prerequisite: Placement Test Recommendation or C or better in MATH 95 Beginning Algebra with Review or MATH 96 Beginning Algebra
Credit Hours: 3
This course will continue from MATH 96 Beginning Algebra to cover properties of relations and functions, properties of radicals and radical expressions, properties of rational expressions, solving quadratic equations using root extraction and the quadratic formula, and extending and building graphing concepts from lines to basic polynomial functions. (Non transferable)

MATH 111 (1713)   Mathematics for Education
Prerequisite: Placement Test Recommendation or C or better in MATH 100 Intermediate Algebra
Credit Hours: 3
This course is designed to provide a foundation of theory for many of the concepts found in the current elementary and middle school mathematics classroom. This course will examine topics related to the Real Number system, such as set theory, logic, probability theory, and statistics, all from a problem solving approach. The use of technology (e.g. calculator, the Internet, etc.) as tools for problem solving and research will be an integral part of the course.

MATH 115 (1719) College Algebra   KRSN MAT1010**
Prerequisite: Placement Test Recommendation or C or better in MATH 100 Intermediate Algebra
Credit Hours: 3
This course continues from MATH 100 Intermediate Algebra to cover and extend the properties of functions and their inverses, properties and graphs of the exponential and logarithmic functions, graphing techniques for general higher order polynomials and rational functions, and various solution techniques for solving higher order linear systems of equations. Topics on sequences and series will be presented as time permits. Use of technology such as the graphing calculator and some computer packages will be incorporated into the course.

MATH 120 (1720) Elementary Statistics   KRSN MAT1020**
Prerequisite: Placement Test Recommendation
Credit Hours: 3
This course is an introduction to fundamental statistical concepts and techniques with computer capability for applying these techniques to data. Includes descriptive statistics, nonparametric statistics, sampling techniques, hypothesis testing and other statistical inference.

MATH 121 Matrix Algebra
Prerequisite: Placement Test Recommendation or MATH 115 College Algebra (C or better)
Credit Hours: 3
This is an introductory course covering basic linear algebra, matrices, and their applications to the sciences, math, business, and economics. The course will cover matrices and matrix algebra, solution of linear systems of equations, the determinant of a matrix and its properties, eigenvalues and eigenvectors of matrices, and vector and inner product spaces.

MATH 125 (1730)   Trigonometry   KRSN MAT1030**
Prerequisite: Placement Test Recommendation or MATH 115 College Algebra
Credit Hours: 3
This course will cover the basic trigonometric functions on the right triangle and extend to rules for solving non-right triangles. Trigonometric identities will be derived and proven. Complex numbers and applications to the sciences will be presented. This course should be taken by any student needing to take Calculus I who has not yet had any exposure to the trigonometric functions. This course is recommended for any student needing to take physics and is required for most pre-engineering and engineering programs.

MATH 129   Quantitative Reasoning
Prerequisite: MATH 100 Intermediate Algebra (C or better)
Credit Hours: 3
This course will prepare students for mathematics encountered in other college courses that use quantitative reasoning. There will be an emphasis on critical thinking skills needed to understand major issues in society. This course is designed for students NOT planning to major in a field that requires advanced mathematical skills.

MATH 130 (1751)   Calculus I   KRSN MAT2010**
Prerequisite: Placement Test Recommendation or MATH 125 Trigonometry
Credit Hours: 5
The first course in the calculus sequence will cover the concepts of limits and continuity of polynomial, rational, trigonometric, and exponential functions. The concept of rates of change and the derivative will be applied to these functions. The course will come to a close with the concepts of the anti-derivative and properties and definition of the definite integral. This course is required of any student seeking a degree in physics, mathematics, engineering, chemistry, and other related fields at a four-year institution.

MATH 131 (1752)   Calculus II
Prerequisite: MATH 130 Calculus I
Credit Hours: 5
This second course in the calculus sequence will cover the concepts of limits as applied to transcendental functions. Various substitution techniques for evaluating integrals will be presented. Problems involving areas, volumes of surfaces, and moments will be developed and solved. The course will cover sequences and series and look at properties of convergence and divergence. There will be an introductory look at differential equations and coverage of polar coordinates and parameterized curves. This course is required of any student seeking a degree in physics, mathematics, engineering, chemistry, and other related fields at a four-year institution.

MATH 201 (1753)   Calculus III
Prerequisite: MATH 131 Calculus II
Credit Hours: 5
This third course will complete the calculus sequence. The course will cover infinite sequences and series and test of convergence and divergence. The calculus of multivariable functions, partial derivatives, and optimization of higher dimensional surfaces will be covered. The theory and use of vector-valued functions to calculus will be presented. Problems of areas, volumes, and moments will be extended to three-dimensional space and solved using multiple integration techniques (including the line integral, Stoke's Theorem, and Green's Theorem in vector fields). This course is required of any student seeking a degree in physics, mathematics, engineering, chemistry, and other related fields at a four-year institution.

MATH 202 (1740)   Differential Equations
Prerequisite: MATH 201 Calculus III
Credit Hours: 3
This course will include solution techniques for the standard ordinary differential equations of the first and second order (with some generalization to higher order equations). Power series solution techniques for linear equations with constant coefficients will be presented. Solution of differential equations using the Laplace Transform will be presented. Applications to geometry and the physical science will be presented and covered. This course is required of any student seeking a degree in physics, mathematics, engineering, chemistry, and other related fields at a four-year institution.