

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 in various 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: Advisor Approval: 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 OSHA 155 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's 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 114 College Algebra with Review KRSN MAT1010**

Prerequisite: None

Credit Hours: 5

This course covers the same material as MATH 115 College Algebra with additional instruction. The course covers 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 115 (1719) College Algebra KRSN MAT1010**

Prerequisite: See Placement Test Recommendation*

Credit Hours: 3

This course covers 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.

*Refer to the Placement Testing Procedure 3.22, page 22 **Refer to Course Transfer, page 17

MATH 119 Elementary Statistics with Review KRSN MAT1020**

Prerequisite: None

Credit Hours: 4

This course covers the same material as MATH 120 Elementary Statistics with additional instruction. 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 120 (1720) Elementary Statistics KRSN MAT1020**

Prerequisite: See 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 (C or better)

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 126 Quantitative Reasoning with Reiview KRSN MAT1040**

Prerequisite: None

Credit Hours: 4

This course covers the same material as MATH 129 Quantitative Reasoning with additional instruction. 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 129 Quantitative Reasoning KRSN MAT1040**

Prerequisite: See Placement Test Recommendation*

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: See 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.

*Refer to the Placement Testing Procedure 3.22, page 22 **Refer to Course Transfer, page 17

MATH 131 (1752) Calculus II KRSN MAT2020**

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 KRSN MAT2030**

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.

Music

MUSI 101 (1051) Music Appreciation KRSN MUS1010**

Prerequisite: None

Credit Hours: 3

This is a survey course in basic fundamentals of music, and from this foundation moving into a better understanding of styles and music from different periods in history. The main purpose is for students to gain a broader understanding of and appreciation for many types and styles of music. We will also see how music is influenced by social, religious, political, and scientific advancements happening in the world at any given time.

MUSI 102 (0822) Children's Music KRSN MUS2010**

Prerequisite: None

Credit Hours: 3

This course is directed toward students in the elementary education program. It is designed to show how music can be taught and integrated into other areas of the elementary classroom curriculum. Traditional areas of music instruction will be covered including fundamentals of music, singing, playing instruments, listening, moving to music, and creative experiences with music. In addition, we will study multicultural approaches to teaching and practice writing lesson plans focusing on the needs and interests of young children.

*Refer to the Placement Testing Procedure 3.22, page 22 **Refer to Course Transfer, page 17