Engineering/CS SLO to PLO Alignment(No Results)_February 2017

CAN Program - Engineering/CS

Apply knowledge of math, science, and engineering or computer science to identify, formulate, and solve engineering/computer science problems.

CAN Dept - Computer Science

CAN CIS 113 : Internet Programming with Ruby

Data types: Distinguish and use various Ruby data types

CAN CIS 113 : Internet Programming with Ruby

Flow control techniques: Implement programming tasks using Ruby flow control techniques

CAN CIS 113 : Internet Programming with Ruby

Blocks and iterators: Understand and use Ruby blocks and iterators

CAN CIS 113 : Internet Programming with Ruby

Arrays: Use arrays and hashes effectively

CAN CIS 113 : Internet Programming with Ruby

Modules: Use built-in Ruby modules and create new (user-defined) modules

CAN CIS 113 : Internet Programming with Ruby

Exceptions: Use exceptions to handle various run-time errors

CAN CIS 113 : Internet Programming with Ruby

Binary and text files: Read and write binary and text files

CAN CIS 113 : Internet Programming with Ruby

CGI: Develop CGI programs (with embedded Ruby)

CAN CIS 113 : Internet Programming with Ruby

Client/server apps: Develop client/server apps using Ruby

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Graphical user interface: Develop Graphical User Interfaces in wxRuby

Apply knowledge of math, science, and engineering or computer science to identify, formulate, and solve engineering/computer science problems.

CAN CIS 113 : Internet Programming with Ruby

Ruby on Rails: Develop basic Ruby on Rails applications

CAN Dept - Engineering

CAN ENGR 100 : Introduction to Engineering

Calculations: Formulate and perform elementary engineering calculations to aid the selection of the best design for a simple device.

CAN ENGR 100 : Introduction to Engineering

Data: Perform experiments analyze and interpret data, and prepare a report summarizing the results of the experiments.

CAN ENGR 210 : Engineering Graphics

Orthographic: Apply rules of orthographic projection to create multiview drawings.

CAN ENGR 210 : Engineering Graphics

Pictorials: Create pictorials from orthographic views.

CAN ENGR 210 : Engineering Graphics

CAD: Use CAD software to create 2D engineering drawings, including working drawings and assembly drawings, as well as 3D models and assemblies.

CAN ENGR 210 : Engineering Graphics

Design: Apply the engineering design process to a design project.

CAN ENGR 210 : Engineering Graphics

Symbols: Adhere to the standard conventions for terminology, symbols, and styles used in engineering graphics.

CAN ENGR 230 : Engineering Statics

Reduce force: Reduce systems of forces to one force or one force and one couple.

CAN ENGR 230 : Engineering Statics

Rigid: Solve for unknown forces for rigid bodies in two-dimensional and three-dimensional equilibrium.

CAN ENGR 230 : Engineering Statics

trusses: Analyze trusses, frames, and machines for external reaction forces and forces between the members.

CAN ENGR 230 : Engineering Statics

centroids: Calculate centroids and moments of inertia for composite bodies.

CAN ENGR 230 : Engineering Statics

Internal: Solve for internal forces in members and construct shear and bending moment diagrams for beams.

Apply knowledge of math, science, and engineering or computer science to identify, formulate, and solve engineering/computer science problems.

CAN ENGR 230 : Engineering Statics

Friction: Solve problems that include friction.

CAN ENGR 230 : Engineering Statics

stability: Analyze the stability of rigid bodies in equilibrium.

CAN ENGR 240 : Engineering Dynamics

particle kinematics: Derive and apply the relationships between position, velocity, and acceleration of a particle in rectilinear and curvilinear motion.

CAN ENGR 240 : Engineering Dynamics

plane motion: Derive relations defining the velocity and acceleration of any particle on a rigid body for translation, rotation and general plane motion.

CAN ENGR 240 : Engineering Dynamics

Newton: Correctly apply Newton's second law to analyze the motion of a particle in rectilinear or curvilinear translation acted upon by forces, or a rigid body in plane motion acted upon by forces and moments.

CAN ENGR 240 : Engineering Dynamics

work-energy: Apply the method of work and energy to problems involving a single particle, a system of particles, or a rigid body in plane motion.

CAN ENGR 240 : Engineering Dynamics

Analysis: Select the method of analysis that is best suited for the solution of a given problem. (Newton's Law, Work and Energy, Impulse and Momentum, or a combination of these methods.)

CAN ENGR 240 : Engineering Dynamics

Coriolis: Describe and analyze the plane motion of a particle relative to a rotating frame. Determine the Coriolis acceleration in plane motion.

CAN ENGR 240 : Engineering Dynamics

Impact: Apply the principle of impulse and momentum to problems of direct and oblique central impact, as well as eccentric impact.

CAN ENGR 260 : Circuits And Devices

responses: Analyze electric circuits for DC, transient, and AC voltage and current responses.

CAN ENGR 260 : Circuits And Devices

techniques: Evaluate different circuits analysis techniques and choose an appropriate technique for a particular circuit.

CAN ENGR 260 : Circuits And Devices

Solution: Synthesize a method of solution to the determine current or voltage in any circuit using a combination Kirchhoff?s Laws, loop and node analysis, the solution of differential equations, generalized impedance and admittance techniques, and phasor methods.

CAN ENGR 260 : Circuits And Devices

op amp: Apply a simple model for transistor and operational amplifiers to design and analyze simple circuits.

CAN ENGR 260 : Circuits And Devices

Steady state: Solve steady state AC circuit and network problems involving power transfer and resonance.

Apply knowledge of math, science, and engineering or computer science to identify, formulate, and solve engineering/computer science problems.

CAN ENGR 260 : Circuits And Devices

simulation: Use a circuit simulation program (MultiSIM, PSPICE) to analyze circuit behavior.

CAN ENGR 261 : Circuits & Devices Lab.

Operate: Operate, safely and properly, multimeters, power supplies, signal generators and oscilloscopes.

CAN ENGR 261 : Circuits & Devices Lab.

Build: Build, from schematic diagrams, circuits using resistive, capacitive and inductive elements as well as switches, potentiometers, transistors, operational amplifiers, lamps, decade boxes and power supplies

CAN ENGR 261 : Circuits & Devices Lab.

Calculate: Calculate dc and ac voltage, current, and power, and experimentally verify the results for a variety of electrical circuits

CAN ENGR 261 : Circuits & Devices Lab.

Design: Design and construct circuits to experimentally verify circuit theorem?s including Ohm?s Law, Kirchhoff Rules, superposition, Thevenin, and Norton theorems.

CAN ENGR 261 : Circuits & Devices Lab.

Verify: Experimentally verify the transient behavior of first- and second-order RLC circuits.

CAN ENGR 261 : Circuits & Devices Lab.

Reports: Write lab reports that evaluate, analyze and summarize results and measurements of circuit behavior, including a discussion of any discrepancies between theoretical and measured results.

CAN ENGR 261 : Circuits & Devices Lab.

Simulation: Use a circuit simulation program (PSPICE, MultiSIM) and other computer applications (MATLAB, MS Excel) to predict circuit behavior.

CAN ENGR 270 : Materials Science

crystals: Identify the crystalline structure of models, and explain now the structure?s characteristics affect a material?s properties.

CAN ENGR 270 : Materials Science

Imperfections: Distinguish between the types of imperfections that can occur in crystalline structures and compare their effects on a material?s properties.

CAN ENGR 270 : Materials Science

s-s diffusion: Calculate rates of steady-state diffusion.

CAN ENGR 270 : Materials Science

mechanical properties: Perform tension, compression, and hardness tests, and interpret the results.

CAN ENGR 270 : Materials Science

strengthening mechanisms: Describe different strengthening mechanisms and thermal processing, and compare their effects.

CAN ENGR 270 : Materials Science

polymers: Relate typical properties of polymers and ceramics to their structures.

Apply knowledge of math, science, and engineering or computer science to identify, formulate, and solve engineering/computer science problems.

CAN ENGR 270 : Materials Science

semi-conductors: Describe the mechanisms for electrical conduction in semiconductors.

CAN ENGR 695 : Independent Study

Proposal: Write a proposal to perform an independent study of an engineering topic or problem.

CAN ENGR 695 : Independent Study

Literature search: Perform a literature search needed to support an independent study of an engineering topic.

CAN ENGR 695 : Independent Study

Propose Solutiion: Formulate, refine, analyze and propose a solution to an engineering problem.

CAN ENGR 695 : Independent Study

Engineering Application: Apply engineering knowledge and skills, and use engineering tools to perform an independent research project on a selected engineering topic.

CAN ENGR 695 : Independent Study

Written Report: Write a report that evaluates, analyzes and summarizes the results of the independent study following generally accepted guidelines in technical reports.

Use techniques, skills, and modern engineering and computer tools necessary for engineering or computer science practice

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CAN CIS 113 : Internet Programming with Ruby

Ruby on Rails: Develop basic Ruby on Rails applications

CAN Dept - Engineering

CAN ENGR 100 : Introduction to Engineering

Role: Evaluate the role of engineers in various societies around the world and throughout history.

CAN ENGR 100 : Introduction to Engineering

Disciplines: Recommend the types of projects and responsibilities that are the most appropriate for various engineering disciplines.

Use techniques, skills, and modern engineering and computer tools necessary for engineering or computer science practice

CAN ENGR 100 : Introduction to Engineering

Calculations: Formulate and perform elementary engineering calculations to aid the selection of the best design for a simple device.

CAN ENGR 100 : Introduction to Engineering

Drawings: Read and write elementary engineering drawings, instructions, and reports.

CAN ENGR 100 : Introduction to Engineering

Data: Perform experiments analyze and interpret data, and prepare a report summarizing the results of the experiments.

CAN ENGR 100 : Introduction to Engineering

License: Illustrate the processes required to become an engineer and maintain a license.

CAN ENGR 210 : Engineering Graphics

Orthographic: Apply rules of orthographic projection to create multiview drawings.

CAN ENGR 210 : Engineering Graphics

Sectioning/Auxiliary: Create auxiliary and section views of an object following correct conventions.

CAN ENGR 210 : Engineering Graphics

CAD: Use CAD software to create 2D engineering drawings, including working drawings and assembly drawings, as well as 3D models and assemblies.

CAN ENGR 210 : Engineering Graphics

Design: Apply the engineering design process to a design project.

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Tolerances: Apply standards of dimensioning and tolerancing to engineering drawings.

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Symbols: Adhere to the standard conventions for terminology, symbols, and styles used in engineering graphics.

CAN ENGR 230 : Engineering Statics

Reduce force: Reduce systems of forces to one force or one force and one couple.

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trusses: Analyze trusses, frames, and machines for external reaction forces and forces between the members.

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centroids: Calculate centroids and moments of inertia for composite bodies.

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Internal: Solve for internal forces in members and construct shear and bending moment diagrams for beams.

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Friction: Solve problems that include friction.

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stability: Analyze the stability of rigid bodies in equilibrium.

CAN ENGR 240 : Engineering Dynamics

particle kinematics: Derive and apply the relationships between position, velocity, and acceleration of a particle in rectilinear and curvilinear motion.

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plane motion: Derive relations defining the velocity and acceleration of any particle on a rigid body for translation, rotation and general plane motion.

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Newton: Correctly apply Newton's second law to analyze the motion of a particle in rectilinear or curvilinear translation acted upon by forces, or a rigid body in plane motion acted upon by forces and moments.

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work-energy: Apply the method of work and energy to problems involving a single particle, a system of particles, or a rigid body in plane motion.

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Analysis: Select the method of analysis that is best suited for the solution of a given problem. (Newton's Law, Work and Energy, Impulse and Momentum, or a combination of these methods.)

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CAN ENGR 260 : Circuits And Devices

responses: Analyze electric circuits for DC, transient, and AC voltage and current responses.

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techniques: Evaluate different circuits analysis techniques and choose an appropriate technique for a particular circuit.

CAN ENGR 260 : Circuits And Devices

Solution: Synthesize a method of solution to the determine current or voltage in any circuit using a combination Kirchhoff?s Laws, loop and node analysis, the solution of differential equations, generalized impedance and admittance techniques, and phasor methods.

CAN ENGR 260 : Circuits And Devices

op amp: Apply a simple model for transistor and operational amplifiers to design and analyze simple circuits.

Use techniques, skills, and modern engineering and computer tools necessary for engineering or computer science practice

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Steady state: Solve steady state AC circuit and network problems involving power transfer and resonance.

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simulation: Use a circuit simulation program (MultiSIM, PSPICE) to analyze circuit behavior.

CAN ENGR 261 : Circuits & Devices Lab.

Operate: Operate, safely and properly, multimeters, power supplies, signal generators and oscilloscopes.

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Build: Build, from schematic diagrams, circuits using resistive, capacitive and inductive elements as well as switches, potentiometers, transistors, operational amplifiers, lamps, decade boxes and power supplies

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Calculate: Calculate dc and ac voltage, current, and power, and experimentally verify the results for a variety of electrical circuits

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CAN ENGR 270 : Materials Science

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Imperfections: Distinguish between the types of imperfections that can occur in crystalline structures and compare their effects on a material?s properties.

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mechanical properties: Perform tension, compression, and hardness tests, and interpret the results.

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strengthening mechanisms: Describe different strengthening mechanisms and thermal processing, and compare their effects.

Use techniques, skills, and modern engineering and computer tools necessary for engineering or computer science practice

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polymers: Relate typical properties of polymers and ceramics to their structures.

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semi-conductors: Describe the mechanisms for electrical conduction in semiconductors.

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Written Report: Write a report that evaluates, analyzes and summarizes the results of the independent study following generally accepted guidelines in technical reports.

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Oral Presentation: Prepare and deliver an oral presentation of the results of the independent study.

Design and perform tests or experiments, analyze and interpret data, and prepare a report summarizing the results of the tests or experiments.

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Ruby on Rails: Develop basic Ruby on Rails applications

CAN Dept - Engineering

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Calculations: Formulate and perform elementary engineering calculations to aid the selection of the best design for a simple device.

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Data: Perform experiments analyze and interpret data, and prepare a report summarizing the results of the experiments.

Design and perform tests or experiments, analyze and interpret data, and prepare a report summarizing the results of the tests or experiments.

CAN ENGR 210 : Engineering Graphics

Design: Apply the engineering design process to a design project.

CAN ENGR 230 : Engineering Statics

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CAN ENGR 270 : Materials Science

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Solution: Synthesize a method of solution to the determine current or voltage in any circuit using a combination Kirchhoff?s Laws, loop and node analysis, the solution of differential equations, generalized impedance and admittance techniques, and phasor methods.

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CAN ENGR 100 : Introduction to Engineering

Drawings: Read and write elementary engineering drawings, instructions, and reports.

CAN ENGR 100 : Introduction to Engineering

Ethics: Explain and analyze ethical issues in engineering

CAN ENGR 210 : Engineering Graphics

Orthographic: Apply rules of orthographic projection to create multiview drawings.

CAN ENGR 210 : Engineering Graphics

Sectioning/Auxiliary: Create auxiliary and section views of an object following correct conventions.

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