First Year Courses

Engineering Practice: APSC 100

Module 1
- Problem analysis and modelling
- Team dynamics
- Oral and written communication skills

Module 2
- Laboratory skills
- Data collection
- Numeric computation

Module 3
- Oral and written communication
- Project management
- Engineering design
- Career development and professional skills

Fall
- APSC 110 - Problem Analysis & Modelling
- APSC 111 - Physics I
- APSC 131 - Chemistry I
- APSC 143 - Computer Programming
- APSC 151 - Geology
- APSC 171 - Calculus I

Winter
- APSC 112 - Physics II
- APSC 132 - Chemistry II
- APSC 162 - Engineering Graphics
- APSC 172 - Calculus II
- APSC 174 - Linear Algebra
- APSC 176 - Engineering Practice
- APSC 178 - Engineering Graphics
- APSC 182 - Applied Mechanics

Core Courses

APSC 111 - Physics I
- Vector
- Motion of a particle
- Particle dynamics
- Work and energy
- Statics and dynamic of rigid bodies
- Conservation of energy
- Momentum and collisions

APSC 112 - Physics II
- Oscillation and waves
- Electric current and resistance
- Electromagnetic waves
- D.C. circuits and electrical measurements
- Electric field and potential
- Magnetic fields
- Environmental illustration

APSC 131 - Chemistry I
- Chemical equilibrium
- Electrochemistry
- Chemical kinetics
- Organic chemistry
- Environmental issues

APSC 132 - Chemistry II
- Entropy and the second law of thermodynamics
- Chemical equilibrium
- Electrochemistry
- Chemical kinetics
- Organic chemistry
- Environmental issues

APSC 143 - Computer Programming
- Graphs and derivatives of vector-valued functions
- Implicit derivatives and related rates
- Fundamental Theorem of Calculus
- Application problems
- Methods of solution
- Second-order differential equations and complex numbers

APSC 151 - Geology
- Introduction to the complex Earth System (the solid earth, hydrosphere, atmosphere, and biosphere)
- Connection between the Earth System and human activity, including local and global-scale impacts
- Sources of geo-materials used in engineering
- Technical, social, economic, and environmental impacts
- Contamination, biodiversity loss, and climate change

APSC 171 - Calculus I
- Systems of linear equations
- Real vector spaces and subspaces
- Solving systems of linear equations using Gaussian elimination
- Eigenvalues and eigenvectors of square matrices

APSC 172 - Calculus II
- Coordinate systems
- Polar and cylindrical coordinates
- Real world applications
- Linearity and superposition
- Power series and Taylor series

APSC 174 - Linear Algebra
- Orthographic projection
- Isometric and dimetric sketches
- Auxiliary and section views
- Dimensioning
- CAD software is used to create models

APSC 182 - Applied Mechanics
- Force distribution within simple trusses, frames, and machines
- Internal shear forces and bending moments
- Engineering stress and strain

English Proficiency

Preparing written engineering documents from oral reports
No required class, but workshops are available to assist students with English skills