Public Relations

PREL

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Electrical and Computer Engineering Emphasis
Required courses—
   CPTR , , , ENGR , , , , , and   .
Major electives—
   Chosen from upper division ENGR and CPTR courses in
   consultation with an advisor.

Mechanical Engineering Emphasis
Required courses—
   CPTR ; ENGR , , , , , ,   and   .
Major electives—
   Chosen from upper division ENGR courses in consultation with
   an advisor.

Minor in Engineering   (20)
Required courses—
   ENGR , , ,
Minor Electives—
   Chosen from ENGR courses in consultation with an engineering
   advisor.
Cognates: MATH ,

Courses   (Credits)
See inside front cover for symbol code.

Computing and Software Engineering

CPTR   ( )
Introduction to Computer Programming
Programming in a selected language. May be repeated for a
total of three unique languages. Satisfies general education
requirements for coActual5 [(Co11/Span<</ActualText<j-5(min)1(isfies)1Onl(al y)40(tual5)]TJ /T1_1r)10(ee)1 ; ENG94 TD 0(o)1m reText<ppl(al y
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CPTR • ( )
Network Computing and Architecture
Concepts applicable to constructing a computer network and
the application of computing algorithms and solutions using
networked computers and devices. Study topics such as physical
transmission media, protocols and associated layers, TCP/IP,
application programming interfaces and frameworks, sockets,
clustering and security. Prerequisite: CPTR .Spring

CPTR • ( )
Software Engineering
Surveys basic software engineering topics associated with the
processes, documents, and products of the entire software life
cycle. Topics include software evolution, project organization,
and management, feasibility studies, product definition, design,
implementation, and testing issues, and the role of the software
engineer within the life cycle. Prerequisite: CPTR .Fall

CPTR • ( )
Computer Architecture
Focus on hardware aspects of computing and logical concepts.
Includes data representation for numbers and other data types,
Boolean algebra, digital logic circuit representations of basic
computational building blocks, CPU components, interrupt
schemes and buses. Relevance of supporting concepts is
discussed, including system software, assemblers, assembly
language programming and operating systems. Prerequisite:
CPTR . Spring

CPTR • ( )
Database Concepts and Theory
Study of issues relevant to abstract and concrete aspects in both
the creation of database management system software and its
use. Indexing, buffering and other internal and physical database
design issues. Relational model algebra, calculus and query
languages. Functional dependencies and normalization. Study
of and modeling using Entity-Relationship and other relevant
paradigms. Common application databases. Introduction to
the use of transactions, query optimization and non-relational
database models. Design and programming assignments using
databases. Prerequisite: CPTR .Spring

CPTR (−)
Topics in _____
Selected topics of current interest in computing such as Robotics,
advanced languages, or others. Repeatable with different
subjects.

CPTR • ( )
Computer Graphics
Introduction to computer graphics focusing on the algorithms
and data structures for the modeling and shading of -d images.
Topics include basic OpenGL programming, mesh generation,
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Spring

CPTR   Alt ( )
Advanced Computer Architecture
Functional analysis of computer hardware and supporting

ENGR   ( )
Thermodynamics
Introduction to the nature of energy and study of energy transport
conservation in closed and flowing systems; properties and
states of solids, liquids, vapors, and gases; enthalpy; meaning
and production of entropy and introduction to cyclic systems.
Prerequisite: PHYS   . Fall

ENGR   ( )
Logic Circuit Design
Modern digital logic families, state machines, design of digital
logic circuits in FPGAs, and VHDL specification of logic circuits.
Prerequisite: ENGR   . Fall

ENGR   ( )
Mechanics of Materials
Study of stresses and strain, deformations and deflections of
posts, shafts, beams, columns; combined stresses; elasticity.
Prerequisite: ENGR   . Fall

ENGR $ ( )
Sensors and Actuators
Study of temperature, mechanical, and optical sensors; sensor
signal conditioning; ac, dc, and stepping motors; and the motor
control requirements. Weekly: lectures and a -hour lab.
Prerequisite: ENGR   . Spring

ENGR   ( )
Fluid Dynamics
Fluid statics and dynamics of fluid motion. Conservation of mass,
momentum, and energy in laminar and turbulent flow. Boundary
layer flow, lift and drag forces, viscous flow in conduits, open
channel flow, flow measurements. Prerequisites: ENGR   , ,
MATH   . Spring

ENGR $ ( )
Programmable Controllers
Introduction to typical programmab4 Td [P1 statics an2sNramma10(b4 Td [Pdmotion;wFBl0ion)1(t)170/T1_2 1 Tf 0 -1.294 TDy on565(eekl)20(y)20(

power spectral density and bandwidth; random processes; noise, signal-to-noise ratio, and error probability; and system performance. Prerequisites: ENGR , , STAT .   Spring

ENGR   ( )
Operations Analysis and Modeling
The methodology of mathematical modeling and its relation to solving problems in industrial and public systems. Linear programming, scheduling, queuing, simulation, optimization, and decision analysis. Prerequisites: MATH , STAT . May not be offered each yearSpring

ENGR   ( )
Finite Element Methods
Introduction of finite element methods for the solution of problems in solid mechanics and heat transfer. Techniques for obtaining approximate numerical solutions to governing differential equations in the problem areas are covered. Industrial software is applied to the analysis and design of a broad range of engineering problems. Prerequisites: ENGR , , MATH .   Fall

ENGR   (−)
Topics in __
Repeatable in different subjects (prerequisites depend on topic).

ENGR   (−)
Community Project in Engineering
"Hands-on" involvement in humanitarian and/or service-oriented projects. Work initiated by students requires prior approval of faculty. Letter grade or graded on S/U basis. May be repeated for up to   credits.

ENGR   ( )
Review of Engineering Design
Selection, proposal and planning of capstone projectFall

ENGR $ ( )
Senior Design Project
A significant design project which culminates in a working system, component, process or a complete description of a proposed design. Both an oral and written presentation of the results of the project are required. Prerequisite: ENGR   or .   Spring

ENGR   (−)
Independent Study
Individual study, research, or project in some field of engineering under the direction of a member of the engineering faculty. Prerequisite: permission of the person who will direct the study.

ENGR   (−)
Cooperative Work Experience
Work experience in industry directed by an engineering faculty member.   hours of work is required per credit. A report must be submitted that summarizes the work experience and indicates the value of the experience to the student. Grade S/U. Repeatable to   credits. Prerequisite: junior/senior standing and permission of the person who will direct the study.

ENGLISH

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Administrators with appointment in the Dept of English
Andrea T. Luxton
Alayne D. Thorpe

Emeriti
Delmer I. Davis
F. Estella Greig
Merlene A. Ogden

Academic Programs	Credits
BA: English	
English Education Emphasis	
Literature Emphasis	
Writing Emphasis	
Minor in English	
Minor in Teaching English to Speakers of Other Languages	
MA: English	
General	
Teaching English to Speakers of Other Languages	

Mission
The Andrews University Department of English constitutes a vital component of this distinctive Seventh-day Adventist institution of higher learning. It draws together a diverse community of learners committed to seeking knowledge, affirming faith, and changing the world. Within the framework of Christian faith and purpose, it develops graduates who are competent, creative and critical readers, writers and thinkers, capable of a variety of careers and scholarly pursuits.

English Proficiency Standards
Students whose first language is not English must meet certain English-language proficiency standards before they are accepted into any program in the Department of English. To qualify for admission, students must have passed one of the language