Jeannette Herring Russ (2002). Professor of Engineering and Department Chair. B.S., Mississippi State University; M.B.A., Colorado State University; Ph.D., Vanderbilt University; P.E.

Don Van (2001). Professor of Engineering and Director of Accreditation. B.S. and M.S., University of Illinois in Chicago; M.S. and Ph.D., New Jersey Institute of Technology; P.E., CEM.

Jay Bernheisel (2006). Professor of Engineering. B.S.M.E. and M.S.M.E., Rose-Hulman Institute of Technology; Ph.D., Northwestern University; P.E.

Georg Pingen (2010). Professor of Engineering. B.A., Samford University; B.S. and M.S., Washington University; Ph.D., University of Colorado at Boulder; P.E.

Randal S. Schwindt (2004). Professor of Engineering. B.S., Hardin-Simmons University; M.S., Texas A&M University; Ph.D., University of Illinois at Urbana-Champaign; P.E.

Christine Rowland (2006). Academic Secretary–Engineering, Physics, Math, and Computer Science.

Ethan Wilding

361. Digital Electronics (4) S
Prerequisite: EGR 261 or CSC 160
Design and simulation techniques for digital systems, including optimal state assignment and state reduction for sequential circuits, circuit fault analysis, and higher level conceptual modeling. Covers system level topics such as computer organization and design test techniques. Includes weekly lab.

365. Electromagnetics (3) F
Prerequisites: EGR 262, MAT 314
An introduction to engineering applications of electric and magnetic fields through the solution of Maxwell's equations in free space and in materials subject to various boundary conditions. Topics include transmission lines, transmission line circuits, the wave equation, wave propagation in unbounded regions, wave reflection and transmission, and antennas.

375. Power Systems and Electrical Machines (3) F
Prerequisite: EGR 262.
Introduces the basic principles of power systems and electrical machines with an emphasis on 3-phase power, theory of machinery, and principles of machine operation. Topics include transformers, electro-mechanics, synchronous machines, induction motors, and DC motors and system-level topics such as power flow, faulty analysis, and economic operation.

391. Major Project Design Preparation (1) S
Prerequisite: 24 EGR credit hours
Provides a review of the engineering design process and allows the student to apply the early stages of the process (including needs assessment and project formulation) to the selection of a senior design project. Exposes students to project sponsors from industry or other external entities and allows them to assess various project proposals. Introduces the basics of project management and presents selected case histories in engineering design and problem solving.

405. Electronic Circuit Analysis and Design (4) F
Prerequisite: EGR 262.
Introduces fundamental principles of electronics, including analysis and design techniques for circuits containing diodes, field effect transistors, and bipolar junction transistors. Includes weekly lab.

416. Physical Principles of Solid State Devices (3) S
Prerequisites: EGR 262; MAT 314.
Introduces concepts in material science and quantum physics, including modern theory of solids, magnetic and optical properties of materials, semi-conductors and semi-conductor devices, dielectric materials, and superconductivity.

455. Energy Conversion (3) S
Pre- or Corequisite: EGR 355.
Provides a comprehensive analysis of current energy systems, including fossil power plants, nuclear plants, and other forms of renewable energy sources; covers the Rankine cycle, steam generators, combustion, and turbines; presents information on the environmental impact of energy generation.

456. Machine and Mechanism Theory and Design (3) F
Prerequisite: EGR 360.
Covers design, selection, and evaluation of mechanisms for various applications, including planar and spatial linkages, cams, gears, planetary and non-planetary gear systems, linkage synthesis, and linkage dynamics.

470. Heat Transfer (3) As Needed
Prerequisite: EGR 355.
The analysis of various heat transfer modes, including conduction, natural and forced convection, and radiation;

180-280-380-480. Study Abroad (1-4)
All courses and their application must be defined and approved prior to travel.

180PF-280PF-380PF-480PF. Study Abroad Programs (Pass/Fail) As Needed
All courses and their applications must be defined and approved prior to travel.

195-6-7. Special Studies (1-4)
281-82-83. Cooperative Education I, II, III (Pass/Fail) As Needed
Offers students an opportunity to obtain a semester (or second or third semester) of fulltime industrial experience while still an undergraduate; allows students to participate in the established program through which academic institutions partner with 4ng (en-US)/MCI82l I, o p4TEM2 (t8cipatm thr4(ed prior tidunde7.(o par)-20.MCI82<Lang (en-US)/MCID 9480 BDC BT0 Tv