

IUPUI School of Science – Bachelor of Science in Physics and Electrical Engineering

FIRST-YEAR EXPERIENCE

Windows on Science SCI I120
or Introduction to the Engineering Profession ENGR 195

1 cr. _____

(With permission another Learning Community may be substituted. Waived only for students who transfer in more than 18 credit hours.)

AREA I - COMMUNICATION

A. English Composition - 6 credits total
(grade of C or better in each course)

English Composition ENG W131 3 cr. _____

Written Comm. in Sci. & Industry TCM 320 3 cr. _____

B. Speech Communication - 3 credits total

Speech Communication COMM R110 3 cr. _____

AREA II - FOREIGN LANGUAGE - *not required*

AREA III - GENERAL REQUIREMENTS

A. Humanities, Social Sciences, & Comparative World Cultures
15 credits total

History of Western Civilization II H114 3 cr. _____

One course each from Lists H, S, and C (9 cr.):

(See School of Science Course List)

B. Junior/Senior Integrator – *not required*

Replace with general educ. course (3 cr.) _____

C. Physical Sciences – 18 credits total

Principles of Chemistry I CHEM C105 (3 cr.) _____

Experimental Chemistry I CHEM C125 (2 cr.) _____

Principles of Chemistry II CHEM C106 (3 cr.) _____

Experimental Chemistry II CHEM C126 (2 cr.) _____

* Linear Circuit Analysis I ECE 201 (3 cr.) _____

* Elec. Measurement Tech. ECE 207 (1 cr.) _____

* Linear Circuit Analysis II ECE 202 (3 cr.) _____

* Elec. Design & Devices Lab ECE 208 (1 cr.) _____

D. Mathematics & Computer Science – 28 credits total

Analytic Geom. & Calc. I MATH 165 (4 cr.) _____

Analytic Geom. & Calc. II MATH 166 (4 cr.) _____

Multidimensional Math. MATH 171 (3 cr.) _____

Multivariate Calculus MATH 261 (4 cr.) _____

Ordinary Differential Eqns. MATH 266 (3 cr.) _____

Probabilistic Methods in EE ECE 302 (3 cr.) _____

Elementary Linear Algebra MATH 351 (3 cr.) or

Linear Algebra with Apps MATH 511 (3 cr.) _____

Computing I CSCI 230 (4 cr.) _____

or the following two courses:

Intro. to Prog. Concepts ENGR 197 (2 cr.) _____

Advanced C Programming ECE 264 (2 cr.) _____

NOTE: Students must have grades of C– or higher in Area IIID. A grade of D or D+ will be allowed for one course only.

AREA IV - MAJOR COURSES

A. Physics – 32 credits total

Mechanics PHYS 152 (4 cr.) _____

Heat, Electricity, & Optics PHYS 251 (5 cr.) _____

Intermediate Mechanics PHYS 310 (4 cr.) _____

Intermediate E & M PHYS 330 (3 cr.) _____

Modern Physics PHYS 342 (3 cr.) _____

Electronics Laboratory PHYS 353 (2 cr.) _____

Physical Optics PHYS 400 (3 cr.) _____

Physical Optics Lab PHYS 401 (2 cr.) _____

Thermal Physics PHYS 416 (3 cr.) _____

Quantum Mechanics PHYS 442 (3 cr.) _____

B. Electrical Engineering – 36 credits total

Computer Tools for Engr. ENGR 297 (1 cr.) _____

Intro. to Analysis & Design ECE 255 (3 cr.) _____

Digital Logic Design w/ lab ECE 270 (4 cr.) _____

Signals and Systems ECE 301 (3 cr.) _____

Microprocessor Systems ECE 362 (4 cr.) _____

Feedback System Analysis ECE 382 (3 cr.) _____

Senior Seminar ECE 400 (1 cr.) _____

Ethics ECE 401 (1 cr.) _____

Transmission of Info. ECE 440 (4 cr.) _____

ECE Electives (9 cr.) _____

Capstone Experience: satisfied by
Senior Design ECE 492 (3 cr.) _____

A minimum of 139 credits must be completed for graduation. Residence of at least two semesters at the IUPUI campus is also required for graduation.

Revised 4/2009