

IUPUI School of Science – B.S. in Physics / M.S. in Mechanical Engineering

FIRST-YEAR EXPERIENCE

Windows on Science SCI I120 1 cr. _____
 (With permission another Learning Community may be substituted. Waived only for students who transfer in more than 18 credit hours.)

One course in Computer Science (3-4 cr.) _____
 (CSCI 23000 or CSCI-N 317)

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 I - COMMUNICATION

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

English Composition ENG W131 3 cr. _____

Choose from: ENG W230, W150, W231, W250, W290, W331 or W350, 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, & Cultural Understanding
 12 credits total

Arts & Humanities (H) - _____ 3 cr. _____
 Social Science (S) - _____ 3 cr. _____
 Cultural Understanding (C) - _____ 3 cr. _____
 Additional H or S - _____ 3 cr. _____

B. Junior/Senior Integrator – not required

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

C. Physical and Biological Sciences – 4 lecture courses
 minimum 16 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.) _____

Two additional physical or biological science or engineering courses approved by the Dept. of Physics:

D. Mathematics and Computer Course Requirements
 minimum 24 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 Eqs. MATH 266 (3 cr.) _____

One 3-credit course beyond MATH 266
 (as approved by the Dept. of Physics) _____

AREA IV - MAJOR COURSES

A. Physics – 24 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.) _____

Thermal Physics PHYS 416 (3 cr.) _____

B. Mechanical Engineering – 11 credits total

Mechanics of Materials ME 272 (4 cr.) _____

Modeling Dynamic Systems ME 330 (3 cr.) _____

Engineering Design ME 462 (4 cr.) _____

C. Advanced Courses – 36 credits total

Note: Students must apply for admission into the Master's program in Mechanical Engineering during their Junior year in order to be able to enroll in 500-level or higher courses.

Applied Mathematics I MATH 537 (3 cr.) _____

Advanced Mathematics II MATH 528 (3 cr.) _____

Intro to Quantum Mech. PHYS 550 (3 cr.) _____

Four 500-level ME primary area courses:
 (Consult the *ME Master's Program Handbook*.)

Two 400 or 500 level PHYS or ME electives:

One 500-level or higher PHYS or MATH: _____

Minimum of 6 credits from the two following courses:

Master's Thesis Option ME 698 (3 cr.) _____

500-level ME primary /related course (3 cr.) _____

AREA V – ELECTIVES

A minimum of 142 credits must be completed for graduation with both the B.S. in Physics and M.S. in Mech. Engineering.