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.)

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 W132, 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, & 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 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) _____

One course in Computer Science (3-4 cr.) _____
(CSCI 230, N305, N331, or higher)

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 – 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.

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