

**Bachelor of Science in Civil Engineering (BSCE) Degree
Department of Engineering**



Effective: **Fall 2013**

All engineering & technical elective courses must have a combined minimum GPA of 2.0.

Course sequencing follows the academic year, and assumes beginning the program in the fall Semester.

The math and physics departments require a C- or better in some pre-requisite courses.

Consult with the most recent bulletin at <http://bulletin.ipfw.edu>

For more information visit <http://www.engr.ipfw.edu>

P = Pre-requisite, C = Co-Requisite, GE = General Education with Categories A, B, and C, and Competencies 1-8.

1 st Semester 16 credits	MA 165 (4) P: MA 154 or MA 159 with C- or better or placement GE A3 <small>Analytical Geometry & Calculus I</small>	CHM 115 (4) P: CHM 111 or 1 yr. H.S. C: MA 154 GE B4 <small>General Chemistry</small>	ENGR 101 (1) GE B7 <small>Introduction to Engineering</small>	ENGR 120 (2) P: MA 153 Area V GE B7 <small>Graphical Communication</small>	ENGR 121 (2) P: MA 154 or MA159 or placement C: ENGR 120 <small>Computer Tools for Engineers</small>	ENG W131 (3) P: ENG W129 with C or better or placement GE A1 <small>Elementary Composition</small>
2 nd Semester 17 credits	MA 166 (4) P: MA 165 with C- or better <small>Analytical Geometry & Calculus II</small>	PHYS 152 (5) C: MA 166 GE B4 <small>Mechanics</small>	ENGR 199 (3) P: ENGR 101 C: ENGR 121, PHYS 152 <small>Intro to Engineering Design</small>	ENGR 221 (2) or CS 227 (2) P: ENGR 101, ENGR121 <small>C Programming for Engineers</small>	COM 114 (3) GE A2 <small>Fund of Speech Communication</small>	
3 rd Semester 18 credits	MA 261 (4) P: MA 166 with C- or better <small>Multivariate Calculus</small>	MA 351 (3) P: MA 166 with C- or better <small>Elementary Linear Algebra</small>	PHYS 251 (5) P: PHYS 152 with C or better) C: MA 261 <small>Heat Electricity and Optics</small>	CE 250 (3) P: PHYS 152 C: MA 261 <small>Statics</small>	CE 210 (3) P: MA 165 ENGR 120 <small>Introduction to Geomatics</small>	
4 th Semester 18 credits	MA 363 (3) P: MA 261 with C- or better C: MA 351 <small>Differential Equations</small>	CE 251 (3) P: CE 250 C: MA 363 <small>Dynamics</small>	CE 252 (3) P: CE 250 <small>Strength of Materials</small>	CE 315 (3) C: CE 252 <small>CE Materials</small>	ME 200 (3) P: CHM 115 C: MA 261 <small>Thermodynamics I</small>	General Education Elective (3) GE B5 <small>GE list (Table B5)</small>
5 th Semester 16 credits	CE 318 (3) P: ME 200, CE 251, and MA 363 <small>Fluid Mechanics</small>	STAT 511 (3) P: MA 166 with C- or higher <small>Statistical Methods</small>	CE 375 (3) P: CE 252 <small>Structural Analysis</small>	CE 316 (1) P: CE 315 <small>CE Materials Lab</small>	CE 330 (3) P: ENGR 199 & junior standing <small>Construction Management</small>	General Education Elective (3) GE B6 <small>GE list (Table B6)</small>
6 th Semester 14 credits	CE 319 (1) P: CE 318 <small>Fluid Mechanics Lab</small>	CE 365 (3) P: CHM 115 GE B4 <small>Environmental Engineering</small>	CE 478 (3) P: CE 375 CE 315 <small>Design of Concrete Structures</small>	CE 345 (3) P: CE 210 <small>Transportation Engineering</small>	CE 380 (3) P: CE 252 C: CE 318 & 381 <small>Soil Mechanics</small>	CE 381 (1) C: CE 380 <small>Soil Mechanics Lab</small>
7 th Semester 14 credits	CE 418 (3) P: CE 318 <small>Hydraulics Engineering</small>	CE 366 (1) P: CE 365 <small>Environmental Engineering Lab</small>	Senior Design: Select one Track Only		CE 401 (1) C: Senior Standing <small>CE Profession and Practice</small>	Technical Elective (3)
			Track 1: Design only	Track 2: Design, Build & Test		
8 th Semester 15 credits	Science Elective (3) GE B7 <small>GE list (Table B7)</small>	Technical Elective (3)	CE 487 (3) P: Senior standing and advisor approval. GE C8 <small>CE Design Project</small>	CE 488 (3)/ ENGR 411 (3) P: CE 487 <small>CE Design Project II</small>	CE 481 P: CE 380 & 381 <small>Foundation Engineering</small>	General Education Elective (3) GE A1-3, B4-7 <small>GE list (Table A1-B7)</small>

Revised Fall 2013

Total credit hours: 128

Key: Math & Science Freshmen Engineering Civil Engineering Mechanical Engineering General Education

List of IPFW General Education Courses for Civil Engineering Students

Table B5. Social and Behavioral+

1	ANTH E105-Culture and Society
2	ANTH L200-Language and Culture
3	GERN G231-Introduction to Gerontology
4	IET 10500-Industrial Management
5	LING L103-Introduction to the Study of Language
6	OLS 25200-Human Relations in Organizations
7	OLS 26800-Elements of Law
8	POLS Y101-Introduction to Political Science
9	POLS Y103-Introduction to American Politics
10	POLS Y107-Introduction to Comparative Politics
11	POLS Y109-Introduction to International Relations
12	POLS Y212-Making Democracy Work
13	POLS Y301-Political Parties and Interest Groups
14	POLS Y319-The United States Congress
15	PSY 12000-Elementary Psychology
16	PSY 23500-Child Psychology
17	PSY 24000-Introduction to Social Psychology
18	PSY 33500-Stereotyping and Prejudice
19	SOC S325-Criminology
20	WOST W210-Introduction to Women's Studies

Table B6. Humanistic and Artistic+

1	COM 24800-Intro to Media Criticism and Analysis
2	ENG L101-Western World Masterpieces I
3	ENG L102-Western World Masterpieces II
4	ENG L202-Literary Interpretation
5	ENG L250-American Literature Before 1865
6	ENG L251-American Literature Since 1865
7	FILM K101-Introduction to Film
8	HIST H201-Russian Civilization I-II
9	HIST H105-American History I
10	HIST H106-American History II
11	HIST H113-History of Western Civilization I
12	HIST H114-History of Western Civilization II
13	HIST H232-The World in the 20th Century
14	PHIL 11000-Introduction to Philosophy
15	PHIL 11100-Ethics
16	PHIL 30100-History of Ancient Philosophy
17	PHIL 31200-Medical Ethics
18	WOST W225-Gender, Sexuality, & Popular Culture

+ Partial list. Other courses that meet all B5 and B6 outcomes can be found in the IPFW bulletin.

Key: IPFW GE Categories & Competencies

Category A: Foundational Intellectual Skills (FIS)

- A.1. Written Communication FIS
- A.2. Speaking and Listening FIS
- A.3. Quantitative Reasoning FIS

Category B: Ways of Knowing (WOK)

- B.4. Scientific WOK
- B.5. Social and Behavioral WOK
- B.6. Humanistic and Artistic WOK
- B.7.1 Multidisciplinary WOK
- B.7.2 Creative WOK

C.8. Capstone

Table A1-B7. Recommended Courses

1	ENG W234-Technical Report Writing (A.1.)
2	ECON E201-Introduction to Microeconomics (A.3.)
3	BIOL 10000-Intro to the Biological World (B.4.)++
4	FNR 10300-Intro to Environmental Conservation (B.4.)++
5	GEOL G103-Earth Science: Materials & Processes (B.4.)++
6	GEOG G107-Physical Systems of the Environment (B.4.)++
7	ECON E200-Fundamentals of Economics (B.5.)
8	ILCS I350-International Communication (B.5.)
9	OLS 26800-Elements of Law (B.5.)
10	PHIL 11100-Ethics (B.6.)
11	BUS W100-Principles of Business Administration (B.7.) ‡
12	PHIL 12000-Critical Thinking (B.7.) ‡
13	PHIL 15000-Principles of Logic (B.7.) ‡
14	PHYS 30200-Puzzles, Strategy Games, & Prob. Sol. (B.7.) ‡
15	ENG W203-Creative Writing (B.7.) ‡

++ meet the science elective course requirement.

‡ meet competency B.7 requirement.

Table B7 Interdisciplinary (Science Elective) *

1	GEOG G315-Environmental Conservation
2	GEOL G300-Environmental and Urban Geology
3	GEOL G305-Geologic Fund. in Earth Science

* Effective Fall 2014. A student shall meet the science elective requirement by either:

- 1) Taking one course from Table B7; or
- 2) Taking a science elective course from Table A1-B7 (i.e., courses 3-6), **and** one additional course that meet competency B7 requirement listed in the IPFW bulletin. However, it is recommended that this additional course be taken from one of the courses that meet competency B7 in Table A1-B7 (i.e., courses 11-15).