



Sample 4-year Guided Pathway for **Bachelor of Science in Biomedical Engineering**  
 Academic Catalog Requirements **2019-2020**

This is **ONLY** a sample degree pathway. Please meet with an academic advisor prior to registration to formulate your own plan, and for additional information refer to the [academic degree requirements](#).

| Year | Fall Semester                                    | Spring Semester                    |
|------|--|------------------------------------|
| 1st  | MATH 2214 Calculus I (GE QA&SR)* 3               | GE H&P 3                           |
|      | GE WC&IL I* 3                                    | GE WC&IL 2 3                       |
|      | CHEM 2050 General Chemistry I (GE NW) 3          | MATH 2215 Calculus II 3            |
|      | CHEM 2051 General Chemistry I Lab 1              | CSCI 2911 Computer Science I** 3   |
|      | ENGE 1000 Introduction to Engineering (GE I&T) 3 | CSCI 2916 Computer Science I Lab 1 |
|      |  | MATH 3307 Differential Equations 3 |
|      | <b>Total Credits</b> 13                          | <b>Total Credits</b> 16            |

| Year                              | Fall Semester                             | Spring Semester                                |
|-----------------------------------|---|--|
| 2nd                               | MATH 2216 Calculus III 3                  | MATH 3305 Linear Algebra 3                     |
|                                   | ENGE 2000 Linear Circuits & Systems 3     | ENGB 2000 Biomechanics 3                       |
|                                   | ENGE 2001 Linear Circuits & Systems Lab 1 | BIOL 2052 General Biology II 4                 |
|                                   | PHYS 2050 General Physics I 3             | BIOL 2052 General Biology II Lab 1             |
|                                   |   | ENGE 2003 Bioengineering Signals and Systems 3 |
|                                   |   | ENGB 2004 Bioinstrumentation Lab 1             |
|                                   | PHYS 2051 General Physics I Lab 1         |  |
|                                   | BIOL 2050 General Biology I 4             |  |
| BIOL 2051 General Biology I Lab 1 |   |  |
|                                   | <b>Total Credits</b> 16                   | <b>Total Credits</b> 15                        |

| Year | Fall Semester  | Spring Semester                            |
|------|--|--|
| 3rd  | ENGB3004 Biomedical Instrumentation and Device Fabrication 3 | ENGE 3006 Electromagnetics 3               |
|      | BIOL 3170 Cell & Molecular Biology 3                         | ENGB 3001 Bioengineering 3                 |
|      | ENGB 3003 Biomedical Imaging and Computer Simulation Lab 1   | Thermodynamics 3                           |
|      | BIOL 3034 Human Physiology 3                                 | ENGB 3002 Transport Phenomena 3            |
|      | BIOL 3035 Human Physiology Lab 1                             | ENGB 3006 Engineering Design Project II 3  |
|      |  | BIOL 3171 Cell & Molecular Biology I Lab 1 |
|      | ENGE 4500 Research I 3                                       |  |
|      | <b>Total Credits</b> 14                                      | <b>Total Credits</b> 16                    |

| Year | Fall Semester           | Spring Semester                |
|------|-------------------------|--------------------------------|
| 4th  | GE CT&E 3               | GE CA 3                        |
|      | GE GC&D 3               | GE AE 3                        |
|      | GE T&M 3                | GE SW 3                        |
|      | Major Elective 3        | MATH 3470 Applied Statistics 3 |
|      | ENGE 4600 Research II 3 | ENGE 4700 Research III 3       |
|      |                         |                                |
|      | <b>Total Credits</b> 15 | <b>Total Credits</b> 15        |

*\*\*This schedule is only a suggestion; make sure you understand the necessary prerequisites for each course and consult with your Academic Advisor. Course availability subject to change; actual degree audits may change depending on course availability in a given semester.*

*\*If you were placed into foundational Writing and Mathematics courses based on your placement and/or test scores, please consult with your academic advisor to develop a degree plan.*

*\*\*If you seek to place out of CSCI 1911 with direct entry into CSCI 2911, contact Dr. Crawford ([scrawford@hpu.edu](mailto:scrawford@hpu.edu)).*

### **Baccalaureate Requirements**

- Total Degree Credits Required = 120 credits of which a minimum of 36 are Upper-Division Credits (level 3000 and above)
- Completion of Major Requirements (*as indicated above*)
- Completion of General Education Requirements (*as indicated above*)
- Cumulative GPA of at least 2.0; Major GPA of at least 2.0
- Residency Requirements: 12 credits of major course work and the last 30 credits immediately preceding graduation (*Service member's Opportunity College students please see your academic advisor*)

### **Program-Specific Requirements**

- The total Credit count for the Program complies with University requirements at HPU. The total for this Program is: **120**
- The General Education Credit Point count for the Program complies with University requirements at HPU. GE Total credit for this program is: **27** (9 x 3), excluding (3 x 3); **this number excludes 9 counted as core**
- The Credit count for Basic Math & Science for the Program complies with ABET Accreditation requirements of 1 out of 4 years (equivalent to 30 credits). The total is: **48**
- The Credit count for Engineering (including Computer Science) for the Program complies with ABET Accreditation requirements of 1.5 out of 4 years (equivalent to 45 credits). The total is: **45**
- There are no unrestricted electives for this Program in order to meet ABET accreditation requirements and enable required Core and Elective course offerings specific to Biomedical Engineering.
- The above credit classification is done in order to meet ABET accreditation requirements and enable required Core and Elective course offerings specific to Biomedical Engineering.
- Research series (I, II, & III) can be either an extension of the Design Project, or relevant industry work such as an internship or a supervised project work under a CNCS faculty.

# General Education Curriculum

## Academic Catalog 2018-2019

This is a general education worksheet that illustrates our general education curriculum requirements for any of our Bachelor's degree programs. Please utilize this worksheet in addition to the Sample Guided Pathways to identify the GE categories and their offerings.

| Hawaii & the Pacific (GE H&P)                               |  | Quantitative Analysis & Symbolic Reasoning (GE QA&SR)        |   |
|---|--|--|---|
| AL 1050   | Languages in the Pacific                           | CSCI 1534  | Data Analysis and Visualization                       |
| ANTH 1500   | Contemporary Social Activism in Hawaii             | MATH 1120  | How Numbers Shape Our Lives                           |
| ARTH 1001   | Arts of Oceania                                    | MATH 1123  | Statistics  |
| BIOL 2170   | Ethnobotany: People and Plants                     | MATH 1130  | Pre-Calculus I  |
| ENG 1101  | Representations of Pacific Life                    | MATH 1150  | Pre-Calculus I & II                                   |
| HAWN 1100   | Beginning Hawaiian I                               | MATH 2214  | Calculus I  |
| HIST 1558   | Living History of Hawaii                           | PHIL 2090  | Principles of Logic                                   |
| PHIL 1001   | Philosophies of Hawaii & the Pacific               | PSY 1100   | Probabilistic Thinking                                |
| Written Communication & Information Literacy I (GE WC&IL 1) |  | Written Communication & Information Literacy II (GE WC&IL 2) |   |
| WRI 1100  | Writing and Analyzing Arguments                    | WRI 1200   | Research, Argument & Writing                          |
| WRI 1150  | Literature & Argument                              | WRI 1250   | Introduction to Research in the Humanities            |
| American Experience (GE AE)                                 |  | Creative Arts (GE CA)  |   |
| AMST 2000   | Topics in American Studies                         | ARTH 2301  | World Art History                                     |
| HIST 1401   | American Stories: Themes in American Hist. to 1877 | ARTS 1000  | Intro. to Visual Arts                                 |
| HIST 1402   | The American Experience: 1865 to Present           | ARTS 2150  | Intro. to Design                                      |
| HUM 1270  | Intro. to Gender & Women's Studies                 | ENG 2000   | The Art of Literature                                 |
| PADM 1000   | Intro. to Leadership in America                    | MUS 1000   | Intro. to Classical Music                             |
| PHIL 2500   | Ethics in America                                  | MUS 2101   | Music in World Culture                                |
| PSCI 1400   | The American Political System                      | THEA 2320  | Acting I: Basic Acting for Stage & Screen             |
| SOC 1000  | Introduction to Sociology                          | WRI 2601   | Intro. to Creative Writing                            |
| Critical Thinking & Expression (GE CT&E)                    |  | Global Crossroads & Diversification (GE GC&D)                |   |
| COM 1000  | Intro. to Communication Skills                     | AL 2000  | Intro. to Linguistics                                 |
| COM 2000  | Public Speaking                                    | ANTH 2000  | Cultural Anthropology                                 |
| ECON 2010   | Principles of Microeconomics                       | GEOG 1500  | World Regional Geography                              |
| ENG 2100  | Ways of Reading: Film, Literature & Culture        | HIST 1002  | Global Crossroads: 1500 to Present                    |
| GEOG 2000   | Visual Human Geography                             | INTR 1000  | The International System                              |
| HIST 1717   | Reacting to the Past                               | MULT 2000  | Global Cinema Studies                                 |
| PH 1300   | Public Health Ethics                               | PH 2060  | Comparative Healthcare Systems                        |
| PSY 1000  | Intro. to Psychology                               | REL 1000   | Intro. to World Religions                             |
| Natural World (GE NW)                                       |  | Sustainable World (GE SW)                                    |   |
| BIOL 1000   | Intro. Biology                                     | AQUA 1200  | Global Aquaculture for Food Security & Conservation   |
| BIOL 1300   | Nutrition: Eat Smarter                             | ARTS 1003  | Sustainable Art & Design                              |
| CHEM 1000   | Intro. Chemistry                                   | BIOL 1500  | Conservation Biology                                  |
| CHEM 2050   | General Chemistry                                  | ENVS 1000  | The Sustainability Challenge                          |
| GEOG 1000   | Intro to Physical Geography                        | ENVS 1030  | Tropical Ecology & Sustainability                     |
| GEOL 1000   | The Dynamic Earth                                  | MARS 1500  | Marine Biology and the Global Ocean                   |
| MARS 1000   | Intro. Oceanography                                | SWRK 2010  | Social Sustainability, Social Work & Entrepreneurship |
| PHYS 1020   | Astronomy  |  |   |

| Technology & Innovation (GE T&I) |  | Traditions & Movements that Shape the World (GE T&M) |   |
|----------------------------------|--|--|---|
| CSCI 1041                        | Digital Literacy in a Global Society                 | AL 1100  | Language, Power, and Identity                   |
| CSCI 1061                        | Mobile Technologies for the 21 <sup>st</sup> Century | CLST 1000  | Great Books East and West                       |
| CSCI 1611                        | A Gentle Intro. to Programming                       | ECON 2015  | Principles of Macroeconomics                    |
| ENGE 1000                        | Intro. to Engineering Syst. & Pro. Practice          | ENG 2500   | World Literature                                |
| HIST 2630                        | The History of Science & Technology                  | HIST 1001  | Traditions & Encounters: World Cultures to 1500 |
| MATH 1234                        | Intro. to Cryptology                                 | PH 1200  | Intro. to Public Health Professions             |
| MIS 2000                         | Information Tools for Business                       | PSCI 2000  | Intro. to Politics                              |
| MULT 1100                        | Foundations of Multimedia Production                 | SOC 2600   | Peace Studies                                   |

*For more information on our General Education curriculum please refer to our Academic Catalog or you may refer here:*  
[http://www.hpu.edu/FacultyAssembly/General\\_Education\\_Curriculum\\_and\\_Learning\\_Assessment\\_Committee.html](http://www.hpu.edu/FacultyAssembly/General_Education_Curriculum_and_Learning_Assessment_Committee.html)