

# Department of Physical Therapy and Health Science

**FACULTY** Associate Professors Mays (chair), Strubhar, Tippet; Assistant Professors S. Bertram, Hall, McGehee (ACCE), Neelly, Peterson

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The Department of Physical Therapy and Health Science offers a Bachelor of Science degree with a health science major in addition to a Doctor of Physical Therapy (D.P.T.) degree. **For more information regarding the D.P.T. degree, please refer to the graduate catalog.**

## Mission

The mission of the Department of Physical Therapy and Health Science is to prepare undergraduate students to enter careers in the health care industry or to enter graduate education in health related fields, and to prepare graduate students as general practitioners in Physical Therapy.

## Vision

The Department of Physical Therapy and Health Science will strive to build a balanced environment of teaching, research, service and practice, which will prepare students to live and work productively in a diverse and ever-changing society.

## Health Science Major

The Health Science major provides students with an excellent preparation for a master's degree program in physical therapy, as well as with multiple opportunities for entry-level positions in the health care industry. This is an "intercollegiate" program with classes taught by faculty from all five colleges at Bradley: Foster College of Business Administration, Slane College of Communications and Fine Arts, College of Education and Health Sciences, College of Engineering and Technology, and College of Liberal Arts and Sciences. (For course descriptions, see the catalog section for the department offering the course.)

The curriculum is designed to assist students in developing skills in communications and problem solving, acquiring knowledge and experience as health care consumers, as well as future health care industry employees, and accepting responsibility for pursuing learning over a lifetime. These skills are valuable for any position students may hold in the future.

Students also select a minor or concentration related to their interests. Sample areas are biology, business, chemistry, communication, computer science, foreign language, physics, psychology, sociology.

## Admission Requirements

In addition to University and College of Education and Health Sciences requirements, the following are recommended for students to receive full consideration for admission to the Health Science major as a freshman:

1. a minimum of three years of high school mathematics and high school science (biology/physiology, chemistry, and physics are recommended);
2. ACT minimum score of 24 composite or SAT minimum score of 1100.

## Health Science Options

Health Science majors can choose from a wide variety of courses in addition to major and minor requirements. Students may use the program's flexibility to explore a variety of interests or may focus their electives around a particular emphasis. Listed under the following emphases are suggestions of elective courses that a student could complete to pursue a particular area of interest.

- Physical Therapy
- Pediatrics / Child Development
- Healthcare Administration
- Pre-Healthcare Professions
- Community Health Education
- Ergonomics

### Physical Therapy

The core courses within the Health Science major are designed to prepare a student to meet prerequisite requirements for most entry-level graduate programs in physical therapy. Students who wish to apply to graduate programs other than Bradley's should be aware of those programs' specific requirements.

The Health Science major requires that students complete a minor or 12-hour concentration, approved by the Department of Physical Therapy and Health Science. Students, in the past, have minored in a variety of areas, including: business, biology, chemistry, Spanish, music, and art, along with many others. Students pursuing physical therapy are advised not to approach their preparation for graduate school with the perception that there is "one best" set of courses to take outside of the core prerequisites. Most programs, in fact, want a diverse student group who are prepared in a variety of different ways. While the Health Science major requires a minor or concentration, students may find that they actually have time to pursue a second major.

### Pediatrics / Child Development

Suggested Electives:

- NUR 163 Health of the School Aged Child
- FCS 203 Health, Safety, and Nutrition
- FCS 341 Human Development Through the Lifespan
- FCS 342 Child Development Laboratory
- FCS 440 Family Relations
- PSY 104 Principles of Psychology
- PSY 304 Developmental Psychology

### Healthcare Administration

Suggested Electives:

- ATG 157 Accounting Principles
  - BMA 352 Managing in Organizations
  - MTG 315 Principles of Marketing
  - FIN 322 Business Finance
  - ECO 221 or 100 Principles of Economics
- Students pursuing this emphasis may also wish to consider the minor in either Business Studies or Business Administration.

### Pre-Health Professions

Students majoring in Health Science may wish to pursue any number of healthcare professions including: occupational therapy, athletic training, physician

assistant, speech/audiology, medical school, and chiropractic medicine. Appropriate courses, along with observation within the field, will vary depending on the profession and the specific graduate program to which the student wishes to apply.

### Community Health Education

Suggested Electives:

- NUR 263 Introduction to Personal & Community Health
  - SOC 341 Applied Medical Sociology
  - SOC 343 Sociology of Mental Health
  - SW 250 Introduction to Social Welfare
- Students pursuing this emphasis may also wish to consider the multimedia minor.

### Ergonomics

Suggested Electives:

- IE 527 Occupational Safety and Health
  - IE 528 Occupational Ergonomics
  - IME 386 Industrial and Managerial Engineering
- Students pursuing this emphasis may also wish to consider the applied ergonomics minor.

## Opportunities

The faculty of the Department of Physical Therapy and Health Science have worked with several hospitals to determine the qualifications they desire in applicants for certain positions. We have found that hospital administrators would like to have applicants with a general health science background as well as a specific area of concentration or minor. Sample concentrations or minors might include communications (patient manager, insurance case manager); computer science (information systems manager); business (business office, assistant to a development officer); science (research assistant); and engineering (research assistant or biomedical technician). Other minors may also serve health science majors well.

In addition, the Health Science major can be used as preparation for various graduate programs (e.g., physical therapy, occupational therapy, human service administration, community counseling). Graduate programs in these areas (except for occupational therapy) are offered at Bradley University.

## Required Courses

|  |   |
|--|---|
| BUS 100 Contemporary Business .....                      | 3 |
| BIO 123, 124 Principles of Biology I, II .....           | 8 |
| BIO 200, 203 Human Anatomy & Physiology (with lab) ..... | 5 |
| BIO 205 Pathophysiology .....                            | 3 |
| CHM 110 & 111; CHM 116 & 117 .....                       | 9 |
| General Chemistry I, II .....                            | 9 |
| MTH 115 or 121 Calculus I .....                          | 4 |
| PHY 107, 108 General Physics I, II .....                 | 8 |
| ELH 310 Statistical Procedures <b>or</b> .....           | 3 |
| PSY 205 Quantitative Methods* .....                      | 3 |
| FCS 303 Nutrition .....                                  | 3 |
| ELH 370, 375 Human Relations Development .....           | 3 |
| (with lab) .....   | 3 |
| HS 110 Introduction to Health Science .....              | 1 |
| HS 320 Fundamentals of the Health Sciences .....         | 3 |
| HS/ETE 402 Educational Methods, Strategies, .....        | 3 |
| and Evaluation Techniques .....                          | 3 |
| HS 460 Basic Science of Human Movement .....             | 3 |
| HS 480 Motion Analysis .....                             | 3 |

## 138 EDUCATION AND HEALTH SCIENCES

Plus two of the following:

|  |              |
|--|--------------|
| HS/FCS 220 Consumer Issues in Health Care..... | 3            |
| NUR 217 Men's Health Issues .....              | 2            |
| NUR 219 Women and Health .....                 | 3            |
| <b>Total</b>                                   | <b>67-68</b> |

\*Health science students will take ELH 310 unless they are minoring in psychology. Psychology minors may take ELH 310 or PSY 205.

At least 124 credit hours are required for the bachelor's degree, with at least 40 credit hours at the 300 level or above. Students must also meet University general education requirements.

Health science majors are required to take a minor or a 12- hour academic concentration, chosen in consultation with advisors in the physical therapy department and the minor/concentration department.

## Sample Curriculum

### Freshman Year

#### Fall Semester

|  |           |
|--|-----------|
| BIO 123 Principles of Biology I .....                | 4         |
| CHM 110 General Chemistry I .....                    | 3         |
| CHM 111 General Chemistry I Lab.....                 | 1         |
| MTH 115 or 121 Calculus I .....                      | 4         |
| Gen. Ed. (recommend ENG 101 <b>or</b> COM 103) ..... | 3         |
| HS 110 Intro to Health Science .....                 | 1         |
| <b>Total</b>   | <b>16</b> |

#### Spring Semester

|  |           |
|--|-----------|
| BIO 124 Principles of Biology II .....               | 4         |
| CHM 116 General Chemistry II .....                   | 4         |
| CHM 117 General Chemistry II Lab.....                | 1         |
| Gen. Ed. (recommend ENG 101 <b>or</b> COM 103) ..... | 3         |
| Gen. Ed. (SF).....                                   | 3         |
| HS/FCS 220 Consumer Issues in Health Care.....       | 3         |
| <b>Total</b>   | <b>18</b> |

### Sophomore Year

#### Fall Semester

|   |              |
|---|--------------|
| BUS 100 Contemporary Business .....                                     | 3            |
| PHY 107 General Physics I.....  | 4            |
| NUR 217 Men's Health Issues <b>or</b><br>NUR 219 Women and Health ..... | 2-3          |
| Elective or Minor Course .....  | 3            |
| Gen. Ed. (FA) .....   | 3            |
| <b>Total</b>  | <b>15-16</b> |

#### Spring Semester

|   |           |
|---|-----------|
| PHY 108 General Physics II.....   | 4         |
| ELH 310 Statistical Procedures in Health Sciences <b>or</b><br>PSY 205 Quantitative Methods ..... | 3         |
| Gen. Ed. (SF).....  | 3         |
| Gen. Ed. (WC) .....   | 3         |
| Elective or Minor Course .....  | 3         |
| <b>Total</b>  | <b>16</b> |

### Junior Year

#### Fall Semester

|   |           |
|---|-----------|
| Minor Courses .....                             | 6         |
| HS 320 Fundamentals of the Health Sciences..... | 3         |
| Gen. Ed. (C2).....                              | 3         |
| BIO 200 Human Anatomy & Physiology.....         | 3         |
| BIO 203 Human Anatomy & Physiology lab .....    | 2         |
| <b>Total</b>                                    | <b>17</b> |

#### Spring Semester

|                                 |           |
|---------------------------------|-----------|
| Elective or Minor Courses ..... | 6         |
| Gen. Ed. (NW).....              | 3         |
| BIO 205 Pathophysiology .....   | 3         |
| FCS 303 Nutrition.....          | 3         |
| <b>Total</b>                    | <b>15</b> |

### Senior Year

#### Fall Semester

|   |           |
|---|-----------|
| Elective or Minor Courses .....             | 9         |
| HS/ETE 402 Educ Meth, Strat, Eval.....      | 3         |
| HS 460 Basic Science of Human Movement..... | 3         |
| <b>Total</b>                                | <b>15</b> |

#### Spring Semester

|  |           |
|--|-----------|
| Electives Minor Courses.....                   | 6         |
| ELH 370 Human Relations Development .....      | 2         |
| ELH 375 Human Relations Development - Lab..... | 1         |
| HS 480 Motion Analysis .....                   | 3         |
| Gen. Ed. (HL or HP) .....                      | 3         |
| <b>Total</b>                                   | <b>15</b> |

## Course Descriptions

**HS 110 Introduction to Health Science 1 hr.**  
Health care professions, terminology, concepts in health science, and basic knowledge and skills of those in health science. Prerequisite: HS major or consent of department Chair.

**HS 220 Consumer Issues in Health Care 3 hrs.**  
Possible care obtained, level of health care, and how to access care for persons from birth to death. Cross listed as FCS 220. Prerequisite: HS 110 and HS major or consent of a cross-listed Department Chair (PT, FCS).

**HS 306 Health Science Applications for Sports and Exercise 3 hrs.**  
Integration of the understanding of basic human structure and function with common conditions that impact the physical performance of active and healthy individuals. Prerequisites: BIO 200, 203.

**HS 320 Fundamentals of the Health Sciences 3 hrs.**  
The practical applications of biology, chemistry, and physics in the health sciences. Prerequisites: BIO 123, 124, 200, 203; CHM 110 & 111, CHM 116 & 117; PHY 107, 108; HS major or consent of department chair.

**HS 402 Educational Methods, Strategies, and Evaluation Techniques 3 hrs.**  
Designed to increase theoretical knowledge and practical skill for teaching persons with different learning styles. Classroom experiences include a focus on methods, strategies, and evaluation techniques to meet different learning styles. Cross listed as ETE 402. Prerequisite: HS or ETE major or consent of instructor.

**HS 425 Independent Study 1-3 hrs.**

Individual study and investigations through selected readings, discussion, and/or written assignment(s). May be repeated up to a total of three hours. Prerequisite: health science major and/or permission of the Department of Physical Therapy chair.

**HS 460 Basic Science of Human Movement 3 hrs.**

Basic science principles and functional applications that govern function of normal musculoskeletal system. Prerequisite: HS major or consent of PT Department chair.

**HS 480 Motion Analysis 3 hrs.**

Analysis of the kinetics and kinematics of human motion from a variety of engineering and physical therapy perspectives. Prerequisite: HS major; HS 320; HS 460; or consent of PT Department Chair.