

# PRE-PROFESSIONAL HEALTH SCIENCES (AS)

**Award:** Associate of Science Degree

**No. of credits required:** 60-65

**For more information:** Contact Professor S. Russell Seidel, Ph.D., 443-412-2166, sseidel@harford.edu (August 15th - June 15th); or Admissions, 443-412-2109; or stem@harford.edu.

## Program Description

This program provides focused degree pathways for students interested in nursing, sonography, or pharmacy professions. This degree will also benefit students interested in exploring various potential careers in the field of Health Sciences, such as occupational therapy.

## Program Goals

Upon successful completion of the Associate of Sciences Degree in Pre-Professional Health Sciences, the student will be able to:

1. Apply the fundamental principles of biology and/or chemistry.
2. Develop data models by applying the scientific method.
3. Discuss ethical issues in the disciplines relevant to health sciences.
4. Use scientific information effectively.
5. Apply computational skills in reasoning, problem-solving, and analysis.
6. Demonstrate the ability to use technology appropriate to mathematical and/or scientific problem solving.

## Transfer Information

This degree is designed to offer a more focused and flexible transfer pathway for students pursuing careers in nursing, pharmacy, sonography, other allied health, or pre-professional fields. Students are encouraged to consult with an academic advisor to identify the most appropriate courses for their intended field of study and transfer institution.

## Employment Information

As of 2024, Data from the US Bureau of Labor Statistics, indicate a 6% growth rate for Registered Nurses, a 5% growth rate for Pharmacists, a 14% growth rate for Physical Therapists and a 11% growth rate for Occupational Therapists. The job growth rate for medical sonographers (combined with cardiovascular technicians) is estimated to be 11%.

## Degree Requirements

### Pre-Professional Health Core Courses

This program requires 60–65 credits to complete, with the exact number depending on a student's chosen specialization and transfer institution. Students are encouraged to work closely with an academic advisor to ensure efficient course selection for completion and transfer.

| Code                                      | Title                                 | Credits |
|-------------------------------------------|---------------------------------------|---------|
| AHS 102                                   | Career Exploration in Health Sciences | 2       |
| BIO 119                                   | Biology for Health Professionals (GL) | 4       |
| or BIO 120                                | General Biology I (GL)                |         |
| ENG 101                                   | English Composition (GE)              | 3       |
| Select an Arts/Humanities Elective (GAH): |                                       | 3       |

|                                                                                                                                                                                |                 |              |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|--------------|
| PHIL 220                                                                                                                                                                       | Bioethics (GAH) |              |
| PHIL 205                                                                                                                                                                       | Ethics (GAH)    |              |
| Arts/Humanities Elective (GAH) ( <a href="https://catalog.harford.edu/general-education/#arts-humanities">https://catalog.harford.edu/general-education/#arts-humanities</a> ) |                 |              |
| Mathematics Elective (GM) ( <a href="https://catalog.harford.edu/general-education/#mathematics">https://catalog.harford.edu/general-education/#mathematics</a> ) <sup>1</sup> |                 | 3-4          |
| Arts/Humanities Elective (GAH) ( <a href="https://catalog.harford.edu/general-education/#arts-humanities">https://catalog.harford.edu/general-education/#arts-humanities</a> ) |                 | 3            |
| Behavioral/Social Science Electives (GB) <sup>2</sup>                                                                                                                          |                 | 6            |
| 200-level Biology (GL) or CHEM (GL) Elective <sup>3</sup>                                                                                                                      |                 | 4            |
| 200-level Biology or CHEM Elective <sup>3</sup>                                                                                                                                |                 | 4            |
| General Electives                                                                                                                                                              |                 | 28-32        |
| <b>Total Credits</b>                                                                                                                                                           |                 | <b>60-65</b> |

<sup>1</sup> A four-credit Mathematics Elective (GM) may be taken to satisfy this requirement. Students should choose based on the course sequence within their specialization.

<sup>2</sup> Specializations include recommended electives.

<sup>3</sup> Course selection depends on intended specialization.

## Recommended Pre-Nursing Specialization

Students must complete any remaining core coursework, including required general education courses, to meet the minimum number of credits required for the degree program.

| Code                                                                                                                                                                           | Title                                       | Credits |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------|---------|
| Mathematics Elective (GM) ( <a href="https://catalog.harford.edu/general-education/#mathematics">https://catalog.harford.edu/general-education/#mathematics</a> ) <sup>4</sup> |                                             | 3-4     |
| BIO 203                                                                                                                                                                        | Anatomy and Physiology I (GL) <sup>*</sup>  | 4       |
| BIO 204                                                                                                                                                                        | Anatomy and Physiology II (GL) <sup>*</sup> | 4       |
| BIO 205                                                                                                                                                                        | Microbiology (GL)                           | 4       |
| ENG 102                                                                                                                                                                        | Introduction to Literature                  | 3       |
| PSY 101                                                                                                                                                                        | General Psychology (GB) <sup>*</sup>        | 3       |
| PSY 214                                                                                                                                                                        | Human Development Across the Life Span      | 3       |
| SOC 101                                                                                                                                                                        | Introduction to Sociology (GB) <sup>*</sup> | 3       |
| SPAN 101                                                                                                                                                                       | Elementary Spanish I (GAH) <sup>*</sup>     | 3       |
| or Arts/Humanities Elective (GAH)                                                                                                                                              |                                             |         |
| Select one of the following:                                                                                                                                                   |                                             | 1       |
| General Elective                                                                                                                                                               |                                             |         |
| Physical Education Elective                                                                                                                                                    |                                             |         |
| General Elective                                                                                                                                                               |                                             | 1       |
| General Elective <sup>5</sup>                                                                                                                                                  |                                             | 4       |
| General Elective <sup>6</sup>                                                                                                                                                  |                                             | 3       |
| General Elective                                                                                                                                                               |                                             | 3       |
| General Elective                                                                                                                                                               |                                             | 3       |
| General Elective                                                                                                                                                               |                                             | 3       |

<sup>4</sup> MATH 216 Introduction to Statistics (GM) is recommended.

<sup>5</sup> CHEM 111 General Chemistry I (GL) is recommended for BSN students.

<sup>6</sup> BIO 210 Nutrition (GS) recommended for BSN students.

<sup>\*</sup> Satisfies core program requirements.

## Recommended Pre-Sonography Specialization

Students must complete any remaining core coursework, including required general education courses, to meet the minimum number of credits required for the degree program.

| Code                                                                                                                                                                                                          | Title                            | Credits |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|---------|
| AHS 101                                                                                                                                                                                                       | Medical Terminology and Ethics   | 3       |
| BIO 203                                                                                                                                                                                                       | Anatomy and Physiology I (GL) *  | 4       |
| BIO 204                                                                                                                                                                                                       | Anatomy and Physiology II (GL) * | 4       |
| Select one of the following: *                                                                                                                                                                                |                                  | 3-4     |
| MATH 109                                                                                                                                                                                                      | Precalculus Mathematics (GM)     |         |
| Mathematics Elective (GM) ( <a href="https://catalog.harford.edu/general-education/#mathematics">https://catalog.harford.edu/general-education/#mathematics</a> )                                             |                                  |         |
| Select one of the following: *                                                                                                                                                                                |                                  | 3       |
| SOC 101                                                                                                                                                                                                       | Introduction to Sociology (GB)   |         |
| Behavioral/Social Science Elective (GB) ( <a href="https://catalog.harford.edu/general-education/#behavioral-social-science">https://catalog.harford.edu/general-education/#behavioral-social-science</a> )   |                                  |         |
| ENG 102                                                                                                                                                                                                       | Introduction to Literature       | 3       |
| PHYS 101                                                                                                                                                                                                      | Introductory Physics I (GL)      | 3-4     |
| or SCI 105                                                                                                                                                                                                    | Physical Science I (GS)          |         |
| CMST 101                                                                                                                                                                                                      | Speech Fundamentals (GI)         | 3       |
| Arts/Humanities Elective (GAH) ( <a href="https://catalog.harford.edu/general-education/#arts-humanities">https://catalog.harford.edu/general-education/#arts-humanities</a> ) *                              |                                  | 3       |
| Behavioral/Social Science Elective (GB) ( <a href="https://catalog.harford.edu/general-education/#behavioral-social-science">https://catalog.harford.edu/general-education/#behavioral-social-science</a> ) * |                                  | 3       |
| General Electives <sup>7</sup>                                                                                                                                                                                |                                  | 15      |

<sup>7</sup> Students planning to transfer to Johns Hopkins Schools of Medical Imaging should choose a second mathematics.

\* Satisfies core program requirements.

## Recommended Pre-Pharmacy Specialization

Students must complete any remaining core coursework, including required general education courses, to meet the minimum number of credits required for the degree program.

| Code                           | Title                                      | Credits |
|--------------------------------|--------------------------------------------|---------|
| BIO 120                        | General Biology I (GL) *                   | 4       |
| BIO 203                        | Anatomy and Physiology I (GL) *            | 4       |
| BIO 204                        | Anatomy and Physiology II (GL) *           | 4       |
| BIO 205                        | Microbiology (GL)                          | 4       |
| CHEM 111                       | General Chemistry I (GL)                   | 4       |
| CHEM 112                       | General Chemistry II A (GL)                | 4       |
| CHEM 207                       | Organic Chemistry I                        | 4       |
| CHEM 208                       | Organic Chemistry II                       | 4       |
| CMST 210                       | Group Communication and Leadership (GAH) * | 3       |
| ECON 101                       | Macroeconomics (GB) *                      | 3       |
| or ECON 102                    | Microeconomics (GB)                        |         |
| ENG 102                        | Introduction to Literature <sup>8</sup>    | 3-4     |
| or BIO 121                     | General Biology II (GL)                    |         |
| MATH 216                       | Introduction to Statistics (GM) *          | 4       |
| MATH 203                       | Calculus I (GM)                            | 4       |
| Select one of the following: * |                                            | 3       |
| SOC 101                        | Introduction to Sociology (GB)             |         |

Behavioral/Social Science Elective (GB) (<https://catalog.harford.edu/general-education/#behavioral-social-science>)

PHYS 101      Introductory Physics I (GL)      4  
or PHYS 201      General Physics I: Mechanics (GL)

<sup>8</sup> ENG 102 Introduction to Literature is recommended for transfer to UMES. BIO 121 General Biology II (GL) is recommended for transfer to University of Maryland.

\* Satisfies core program requirements.

## General Education Degree Requirements

Note: The following codes identify courses which satisfy the General Education Degree Requirements:

Behavioral/Social Science (GB)  
English Composition (GE)  
Arts/Humanities (GAH)  
Interdisciplinary and Emerging Issues (GI)  
Biological/Physical Laboratory Science (GL)  
Mathematics (GM)  
Biological/Physical Science (GS)