

# HEALTH SCIENCES BROAD FIELD

## ASSOCIATE OF SCIENCE (AS) - 60 CREDITS

### About this program

This AS degree provides students a broad base of general education coursework relevant to the field of health sciences. The degree is designed to transfer to all MnSCU system universities offering related baccalaureate programs through a statewide articulation agreement. Students are encouraged to consult with counselors/advisors for guidance and planning regarding the requirements of the various health sciences baccalaureate programs to facilitate the most efficient transition and transfer. Students who intend to pursue graduate level degrees should consider M State's Pre-Professional Health AS Degree.

### Program outcomes

1. Demonstrate an understanding of biological concepts and processes, especially those related to the structure and function of the human body.
2. Apply knowledge of social, psychological and ethical theories to issues in the health sciences.
3. Communicate effectively with diverse audiences through written, verbal and nonverbal means.
4. Utilize fundamental concepts of critical thinking and mathematical reasoning to solve problems.

### Curriculum overview

Crds	Requirement type
49	Required courses
3	Restricted electives in courses
8	Restricted electives in course types
60	<b>Total</b>

**Developmental courses note:** A student may be required to enroll in developmental courses in reading, writing and math. A student's scores on the Accuplacer assessment will determine enrollment in developmental courses. The purpose of developmental courses is to prepare students for the demands of a college-level curriculum. *Credits may vary.*

**Accreditation:** Minnesota State Community and Technical College is accredited by the Higher Learning Commission, a regional accreditation agency recognized by the U.S. Department of Education. The Higher Learning Commission 230 South LaSalle Street, Suite 7-500 Chicago, IL 60604-1411 <http://www.ncahigherlearningcommission.org> Phone: 312.263.0456 / 800.621.7440

# Curriculum requirement details

## Required courses

Course	Crds
BIOL1122 - General Biology I .....	4
BIOL2202 - Principles of Nutrition .....	3
BIOL2260 - Human Anatomy and Physiology I .....	3
BIOL2261 - Human Anatomy and Physiology I Lab .....	1
BIOL2262 - Human Anatomy and Physiology II .....	3
BIOL2263 - Human Anatomy and Physiology II Lab .....	1
BIOL2267 - Medical Microbiology .....	3
BIOL2268 - Medical Microbiology Lab .....	1
CHEM1111 - General Inorganic Chemistry I .....	5
ENGL1101 - College Writing .....	3
HLTH1000 - Introduction to Healthcare .....	3
MATH1114 - College Algebra .....	4
MATH1207 - Elementary Statistics .....	3
PHIL1201 - Ethics .....	3
PSYC1200 - General Psychology .....	3
PSYC2222 - Lifespan Development .....	3
SOC1111 - Introduction to Sociology .....	3

## Other requirements or restricted electives

### 3 credits from one or more of these Courses:

Course title	Credits
COMM1140 - Interpersonal Communication ....	3
COMM2200 - Intercultural Communication .....	3

### 8 credits from these Course Types:

- Career
- General Education w/MnTC Goals

## Course summaries

### **BIOL1122 - General Biology I** ..... **(4 credits)**

Meets MnTC Goal Areas 2 and 3. This course is an introduction to the structure and function of living systems with an emphasis on cellular and molecular biology. Fundamental concepts include the chemical basis of life, cell structure and function, cell division, metabolism, classical and molecular genetics, and biotechnology. This course includes a laboratory component incorporating experimental design, microscopic work, and cellular and molecular biology techniques. Along with BIOL1123, this course is part of a two-semester sequence of general biology that can be taken in any order.

#### **Prerequisites:**

- Assessment into ENGL 1101 or college level writing equivalent.

### **BIOL2202 - Principles of Nutrition** ..... **(3 credits)**

Meets MnTC Goal Areas 2 and 3. This course is a study of the fundamental principles of nutrition. This course will cover food composition, diet planning, utilization of food nutrients in the body and the requirements for nutrients in infancy, childhood, teen years, athletes, adults and the elderly. Also included are discussions about current trends in nutrition, the relationship of diet and disease, and cultural differences in dietary practices. Using the basic principles of nutrition, students will have a lab-like experience tracking, measuring, calculating and analyzing their diet and presenting the results in a written analytical report.

#### **Prerequisites:**

- CHEM1100

OR

- Instructor permission

OR

- CHEM1111

OR

- BIOL1122

OR

- BIOL2260

### **BIOL2260 - Human Anatomy and Physiology I** ..... **(3 credits)**

Meets MnTC Goal Area 3. This course is a comprehensive introductory overview of human anatomy and physiology that includes basic fundamental concepts of cell biology, tissues and organs making up the integumentary, skeletal, muscular and nervous systems. It is the first of a two-semester sequence in which anatomy and physiology are studied with an emphasis on structure and functions of systems. This course contains a lab-like component.

#### **Prerequisites:**

- Assessment into ENGL 1101 or college level writing equivalent.

### **BIOL2261 - Human Anatomy and Physiology I Lab** ..... **(1 credits)**

Meets MnTC Goal Area 3 when taken with BIOL 2260. This course is the laboratory component of a comprehensive introductory overview of human anatomy and physiology that includes basic fundamental concepts of cell biology, tissues and organs making up the integumentary, skeletal, muscular and nervous systems. This course is the first of a two-semester sequence in which anatomy and physiology are studied with an emphasis on structure and functions of systems.

#### **Prerequisites:**

- Assessment into ENGL 1101 or College Level writing equivalent.

#### **Corequisites:**

- BIOL 2260

**BIOL2262 - Human Anatomy and Physiology II** ..... (3 credits)  
 Meets MnTC Goal Area 3. This course is a continuation of Anatomy and Physiology I. Topics will include the study of cells, tissues and organs making up the endocrine, cardiovascular, lymphatic and immune, respiratory, digestive, urinary and reproductive systems. Emphasis is on the structure and function of included systems. This course contains a lab-like component.

**Prerequisites:**

- Assessment into ENGL 1101 or college level writing equivalent.
- BIOL2260

**BIOL2263 - Human Anatomy and Physiology II Lab** ..... (1 credits)  
 Meets MnTC Goal Area 3 when taken with BIOL 2262. This course is the laboratory component of a comprehensive introductory overview of human anatomy and physiology that includes basic fundamental concepts of cells, tissues and organs making up the endocrine, cardiovascular, respiratory, digestive, urinary and reproductive systems. This course is the second of a two-semester sequence in which anatomy and physiology are studied with an emphasis on structure and functions of systems.

**Prerequisites:**

- Assessment into ENGL 1101 or College Level writing equivalent.
- BIOL2260
- BIOL2261

**Corequisites:**

- BIOL2262

**BIOL2267 - Medical Microbiology** ..... (3 credits)  
 Meets MnTC Goal Area 3. This course is the study of the structure and the classification of bacteria, viruses, parasites and fungi of medical importance. It emphasizes the transmission of disease agents, signs and symptoms, immunology, immunization, control of microbial growth, specimen collection/transport, methods of identification and antimicrobial resistance. This lecture course includes lab-like components.

**Prerequisites:**

- Assessment into ENGL 1101.

**BIOL2268 - Medical Microbiology Lab** ..... (1 credits)  
 Meets MnTC Goal Area 3. This laboratory course includes the fundamental techniques of cultivation, staining, biochemical analysis and identification of known and unknown bacterial isolates, and antimicrobial susceptibility testing. Morphological examination and pathogenesis of fungi, protozoans and helminths are also addressed.

**Prerequisites:**

- Assessment into ENGL1101 or college level writing equivalent.

**Corequisites:**

- BIOL2267

**CHEM1111 - General Inorganic Chemistry I** ..... (5 credits)  
 Meets MnTC Goal Areas 2 and 3. This course is the first of a two-course series (CHEM1111 and CHEM1112). Students will learn the general chemistry principles: atomic structure, stoichiometry, solutions, bonding, thermochemistry, electronic structure, periodic properties of the elements, intermolecular forces and properties of solids, liquids and gases. The course includes a lab.

**Prerequisites:**

- MATH1020

OR

- Instructor permission for students who do not score high enough on the placement exam for placement into Chem1111 but wish to enroll in Chem1111. Students with this permission must co-register for Chem 0095.

**ENGL1101 - College Writing** ..... (3 credits)  
 Meets MnTC Goal Area 1. This is an introductory writing course designed to prepare students for later college and career writing. The course focuses on developing fluency through a process approach, with particular emphasis on revision. Students will consider purpose and audience, read and discuss writing and further develop their own writing processes through successive revisions to produce polished drafts. Course work will include an introduction to argumentative writing, writing from academic sources and a short research project.

**Prerequisites:**

- Completion of ELL1080, ENGL0096, or ENGL0097 with a grade of C or higher OR placement into college-level English.

**HLTH1000 - Introduction to Healthcare** ..... (3 credits)  
 This course provides a high-level, experiential overview of the basic aspects of various healthcare-related fields of study. Topics include communication, awareness and sensitivity, successful behaviors in a healthcare setting, healthcare ethics, safety and standard precautions, legal issues in healthcare, diversity in a healthcare setting, handling patient records, and career exploration.

**MATH1114 - College Algebra** ..... (4 credits)  
 Meets MnTC Goal Areas 2 and 4. This course includes rational, polynomial, exponential, logarithmic, inverse and quadratic functions. The course also includes equations, inequalities, complex numbers and systems of linear equations. Additional topics may include matrices and determinants.

**Prerequisites:**

- MATH1020

OR

- Placement Exam

**MATH1207 - Elementary Statistics** ..... (3 credits)  
 Meets MnTC Goal Areas 2 and 4. This course will investigate descriptive and inferential statistical concepts including measures of central tendency, measures of variation, measures of position, frequency tables, statistical graphs, probability distributions, hypothesis tests, confidence intervals, regression and correlation. TI calculators, MINITAB or EXCEL may be used for data analysis.

**Prerequisites:**

- MATH1114

OR

- MATH1118

OR

- by placement

**PHIL1201 - Ethics** ..... (3 credits)  
 Meets MnTC Goal Areas 2, 6 and 9. This course is an introduction to the topic of ethics. In this course, the following questions are examined: What is ethics? How do we make ethical decisions? Are things that are legally right necessarily right? Should we consider our own interests when making ethical decisions? Are things ethically right simply because God says they are right? If our culture says something is ethically right, does that mean it is ethically right? The course also examines numerous topical ethical issues such as racism, terrorism and censorship.

**PSYC1200 - General Psychology** ..... (3 credits)  
 Meets MnTC Goal Areas 5 and 9. This is a comprehensive introductory overview of psychology that studies human behavior and mental processes. Topics include (but are not limited to) research methods, the history of psychology, neuroscience and behavior, developmental psychology, sensation and perception, motivation and emotion, health psychology, learning and memory, personality, social psychology, psychopathology and treatments, and states of consciousness such as sleep and dreams.

**PSYC2222 - Lifespan Development** ..... (3 credits)  
 Meets MnTC Goal Areas 5 and 9. This course is a study of human development from the lifespan perspective, including theories, stages and influences of development. The course views the individual from conception to death through physical, cognitive, social and emotional development.

**SOC1111 - Introduction to Sociology** ..... (3 credits)  
 Meets MnTC Goal Areas 2, 5 and 7. This course is an introduction to the study of societies and the social factors that influence individual and group behavior. The course incorporates sociological and other critical thinking models for the investigation of various components of social life: culture, socialization, social organization, social stratification, social institutions, populations dynamics and social change.

**COMM1140 - Interpersonal Communication** ..... (3 credits)  
Meets MnTC Goal Area 1. This course will focus on improving students' abilities to communicate effectively in one-to-one dyadic encounters by providing experience-based instruction. Extensive in-class and out-of-class analyses allow the student to examine his/her own and others' informal social interactions. The long-term goal is for the student to apply interpersonal communication theories to daily interactions and draw his/her own conclusions about the effectiveness of interpersonal communication.

**COMM2200 - Intercultural Communication** ..... (3 credits)  
Meets MnTC Goal Areas 1 and 7. This course explores the nature of communication within and between cultures and co-cultures. This class will challenge students to think about their own cultural assumptions and explore ways in which these assumptions differ from those held by people in other cultures. Students will review theories of communication and culture and will examine how culture is evident in languages, behaviors, rituals, norms and worldviews. Students will observe and describe their own cultural background and will learn to respectfully communicate with members of other cultures.



# HEALTH SCIENCES BROAD FIELD

## ASSOCIATE OF SCIENCE (AS) - 60 CREDITS

### Program Plan — "Primary"

Locations: Fergus Falls, Moorhead, Online

#### 1st Fall Term (15 credits)

##### Courses

Course	Crds
BIOL1122 - General Biology I .....	4
CHEM1111 - General Inorganic Chemistry I .....	5
ENGL1101 - College Writing .....	3
HLTH1000 - Introduction to Healthcare .....	3

#### 1st Spring Term (14 credits)

##### Courses

Course	Crds
BIOL2267 - Medical Microbiology .....	3
BIOL2268 - Medical Microbiology Lab .....	1
MATH1114 - College Algebra .....	4
SOC1111 - Introduction to Sociology .....	3

##### 3 credits in one or more of the following:

COMM1140 - Interpersonal Communication .....	3
COMM2200 - Intercultural Communication .....	3

#### 2nd Fall Term (16 credits)

##### Courses

Course	Crds
BIOL2202 - Principles of Nutrition .....	3
BIOL2260 - Human Anatomy and Physiology I .....	3
BIOL2261 - Human Anatomy and Physiology I Lab .....	1
MATH1207 - Elementary Statistics .....	3
PSYC1200 - General Psychology .....	3

##### 3 credits in one or more of the following:

Career
General Education w/MnTC Goals

#### 2nd Spring Term (15 credits)

##### Courses

Course	Crds
BIOL2262 - Human Anatomy and Physiology II .....	3
BIOL2263 - Human Anatomy and Physiology II Lab .....	1
PHIL1201 - Ethics .....	3
PSYC2222 - Lifespan Development .....	3

##### 5 credits in one or more of the following:

Career
General Education w/MnTC Goals