

# APPLIED HEALTH SCIENCES

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The Applied Health Sciences (<https://www.bethel.edu/undergrad/academics/human-kinetics/>) programs endorse a philosophy that the key to health and wellness is the quality of one's lifestyle, which has physical, mental, emotional, social, and spiritual aspects. The department's mission is to promote health and wellness with an emphasis on prevention; lifelong learning; and the acquisition of knowledge, attitudes, and skills that can be integrated into a holistic lifestyle. The department provides physical wellness, fitness, and lifetime leisure and sport courses that fulfill General Education requirements for all Bethel students. A goal of both the professional programs and the General Education courses is to develop whole and holy persons who will strive to be salt and light as ambassadors for Jesus Christ.

## Majors in Applied Health Sciences

- B.S. in Exercise Science (<http://catalog.bethel.edu/arts-sciences/academic-programs-departments/human-kinetics-applied-health-science/exercise-science-bs/>)
- B.S. in Human Bioenergetics (<http://catalog.bethel.edu/arts-sciences/academic-programs-departments/human-kinetics-applied-health-science/human-bioenergetics-bs/>)
- B.S. in Rehabilitation and Movement Science (<http://catalog.bethel.edu/arts-sciences/academic-programs-departments/human-kinetics-applied-health-science/rehabilitation-and-movement-science-bs/>)

### **AHS 100 • Foundations in Applied Health Science** 1 Credit

A starting point for "life after Bethel" discussions and assignments throughout the academic career in applied health sciences majors. Explores the knowledge, skills, and competencies for career pathways in medical and applied/allied health science fields. Students discover, practice, and reflect on the building blocks for success in health-related career pathways.

*Offered: Fall, Spring.*

### **AHS 120 • First Aid** 1 Credit

Emphasizes the citizen responder as the first link in the emergency medical services system through the American Red Cross First Aid course. Includes CPR/AED for the Professional Rescuer.

*Offered: Fall, Spring.*

### **AHS 130 • Personal and Community Health** 3 Credits

Focus on health promotion and the development of skills to make informed lifestyle decisions. Examination of current information on major health issues including exercise, nutrition, stress, tobacco/alcohol/drug use, mental health, sexual health, environmental health, and disease. Emphasis on the importance of becoming an advocate for personal, family, and community health.

*Offered: Fall, Spring.*

### **AHS 170 • Applied Nutrition** 3 Credits

Effects of nutrition on health, human performance and reduction of chronic disease throughout the lifespan. Topics covered also include disordered eating, weight management, supplements, and societal and cultural issues related to nutrition.

*Offered: Fall, January, Spring.*

### **AHS 205QA • Self-expression through Dance** 2 Credits

A wide variety of rhythmic movement and dance that enhance creative expression, fitness development, and understanding of, and appreciation for, a variety of dance forms. Students think and move creatively and develop rhythmic skills through participation in aerobic dance, square dance, ethnic dance, and ballroom dance.

*Offered: Occasionally.*

## Applied Health Sciences 2

### **AHS 247 • Motor Development and Learning** 3 Credits

The mechanisms of human motor learning and development with special emphasis on the physical and psychological principles involved in the acquisition and maintenance of motor skills.

*Prerequisites:* BIO 214/BIO 215. *Offered:* Fall, Spring.

### **AHS 250M • Statistics and Research Methods in Applied Health Sciences** 3 Credits

Descriptive statistics. Discrete probability spaces, random variables, and distributions. Normal distribution, statistical inference, estimation, hypothesis testing, linear regression, correlation analysis, and analysis of variance. Applications to healthcare and Institutional Review Board (IRB) human-based research projects.

*Offered:* Fall, Spring. *Special Notes:* Students may not receive credit for AHS 250M and PSY 230M or MAT 207M. AHS 250M does not count toward the psychology minor elective credit requirement.

### **AHS 303KZ • Integrative Medicine in a Cross-Cultural Setting** 3 Credits

Theories and practices of integrative medicine that promote quality health and wellness. Models from ancient Mayan practices to modern Western medical practices. Scientific theories include ethnobotany, psychoneuroimmunology, integrative nutrition, and biofeedback. Practices may include therapeutic touch, yoga, mindfulness, contemplative prayer, nature therapy, and healing effects of physical activity and movement.

*Prerequisites:* Laboratory Science (D) course and Mathematics (M) course. *Offered:* Occasionally January.

### **AHS 370 • Functional Human Nutrition** 3 Credits

Prepares students in functional nutrition, emphasizing human biochemistry and cellular energetics. Explores the relationship of nutrients to health pathologies, including metabolic syndrome, obesity, diabetes, cardiovascular disease, and cancer. Practical experience with nutritional interventions for health optimization and disease management. Emphasis in biochemical individuality for positive, nutritional modulation in oxidative phosphorylation.

*Prerequisites:* BIO 120/BIO 120D or BIO 122/BIO 122D or CHE 113/CHE 113D and AHS 170. *Offered:* Fall, Spring.

### **AHS 375 • Functional Anatomy** 3 Credits

Mechanics of sports performance and anatomical kinesiology. Newtonian mechanics, types of motion, application of force, maintenance of equilibrium, and fluid dynamics.

*Prerequisites:* BIO 214/BIO 215 or BIO 238/BIO 239 and Mathematics (M) course. *Offered:* Fall, Spring. *Special Notes:* PHY 102/PHY 102D and AHS 247 are recommended prerequisites.

### **AHS 376 • Functional Anatomy Lab** 1 Credit

Laboratory experience accompanying AHS 375.

*Corequisites:* Concurrent registration in AHS 375 required. *Offered:* Fall, Spring.

### **AHS 379 • Integrative Human Physiology** 3 Credits

Examination of how normal human physiological function (homeostasis) is altered, and subsequently restored, in response to various forms of acute and chronic stress.

*Prerequisites:* BIO 214/BIO 215 and BIO 216/BIO 217. *Offered:* Fall, Spring.

### **AHS 380 • Integrative Human Physiology Lab** 1 Credit

Laboratory experience accompanying AHS 379.

*Corequisites:* Concurrent registration in AHS 379 is required. *Offered:* Fall, Spring.

### **AHS 393 • Literature Review in Biokinetics** 1 Credit

Students develop and work on their research project and IRB. Students use literature to formulate an independent project. Completion of IRB is expected. Discussions of careers, graduate and medical school application and entrance examinations.

*Corequisites:* Concurrent registration in AHS 398 and AHS 399. *Offered:* Spring.

### **AHS 398 • Physiological Assessment Laboratory** 1 Credit

Laboratory experience accompanying AHS 399.

*Prerequisites:* AHS 379, (may be taken concurrently). *Corequisites:* Concurrent registration in AHS 393 and AHS 399 is required. *Offered:* Spring.

**AHS 399 • Physiological Assessment 3 Credits**

Applied techniques in the measurement of exercise bioenergetics, neuromuscular performance, cardiorespiratory fitness, and other health components. Particular emphasis is given to the knowledge necessary for exercise testing certifications and development of fitness testing skills.

*Prerequisites:* AHS 379/AHS 380, (may be taken concurrently). *Corequisites:* Concurrent registration in AHS 393 and AHS 398 is required. *Offered:* Spring.

**AHS 440 • Advanced Training for Human Performance 3 Credits**

Prepares students to systematically design training and conditioning programs to enhance the function and capacity of the musculoskeletal and cardiovascular systems. Utilizes periodization and mathematical models with expected physiological and neuromuscular adaptations to maximize human performance in sport, pre-habilitation, public health, and special populations.

*Prerequisites:* BIO 216/BIO 217 and BIO 238/BIO 239 or Consent of instructor. *Offered:* Fall.

**AHS 445 • Advanced Laboratory Techniques in Biokinetics 3 Credits**

Collection, interpretation, and prescription of human subjects data conducted. Activities focus on how to work in a dynamic laboratory and refine and master previously learned assessment skills.

*Prerequisites:* AHS 399. *Offered:* Fall.

**AHS 450 • Clinical Neuromuscular Interventions 3 Credits**

Synthesizes content from various foundational classes, the skills of the assessment lab, and guidance from a practicing clinician to foster in-depth exploration of various topics. Reviews the anatomy and physiology of the nervous system and investigates neurologic atypical and/or pathological conditions. Independent and team learning, hands-on labs, and experiential observations.

*Prerequisites:* AHS 375 and AHS 399. *Offered:* Fall, Spring.

**AHS 481 • Internship in Applied Health Sciences 1-4 Credits**

A practical experience in an off-campus setting in applying academic knowledge and professional skills under the dual supervision of a faculty member and a practicing professional. Experience is designed by the student in consultation with a faculty member.

*Prerequisites:* AHS 399 or Consent of instructor. *Special Notes:* Application must be made at least one semester prior to the intended experience. *Offered:* Fall, Spring.

**AHS 494 • Biokinetics Research 1 Credit**

Students develop and work on their senior research project. Students complete data collection and continue the discussion of "life after Bethel." In addition, social networking, public speaking, and presentations are explored.

*Prerequisites:* AHS 393. *Offered:* Fall.

**AHS 495 • Biokinetics Symposium 1 Credit**

Students prepare and deliver formal presentation and manuscripts of their research results. Weekly discussions cover current research topics. The discussion of "life after Bethel" is continued.

*Prerequisites:* AHS 494. *Offered:* Spring.

**PEA 110Q • Disc Golf 1 Credit**

An introduction to the game of disc golf. Includes history, equipment, etiquette, rules, technique, scoring, and playing of the sport.

*Offered:* Fall, Spring.

**PEA 112Q • Walk Jog Run 1 Credit**

Basic introduction to running for health. Students learn to monitor heart rates as they progress from a walking/jogging base to runs of up to an hour in length. Proper warmup and recovery are stressed. Students begin with workouts appropriate to their fitness levels and set goals appropriate for those levels.

*Offered:* Fall, Spring.

**PEA 142Q • Slow Pitch Softball 1 Credit**

Fundamental skills of slow-pitch softball for the recreational player.

*Offered:* Fall, Spring.

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### **PEA 144Q • Beginning Tennis** 1 Credit

Basic tennis strokes. Includes instruction, drills, practice, and playing time. Covers rules, simple strategy, player position, etiquette, and guidelines for equipment selection.

*Offered: Fall, Spring.*

### **PEA 152Q • Yoga** 1 Credit

Development of physical fitness and self-awareness through core stabilizing and strengthening exercises as an integral part of health and wellness. Emphasis on the integration of Christian faith and exercise while learning correct postures, alignments, and focus.

*Offered: Spring. Special Notes: Students must provide their own exercise/yoga mat.*

### **PEA 153Q • Pickleball** 1 Credit

Fast paced net game with similarities to tennis, badminton, table tennis, and racquetball; content includes rules, strategies, techniques, and court positioning for singles and doubles, and extensive active practice and play.

*Offered: Fall, Spring.*