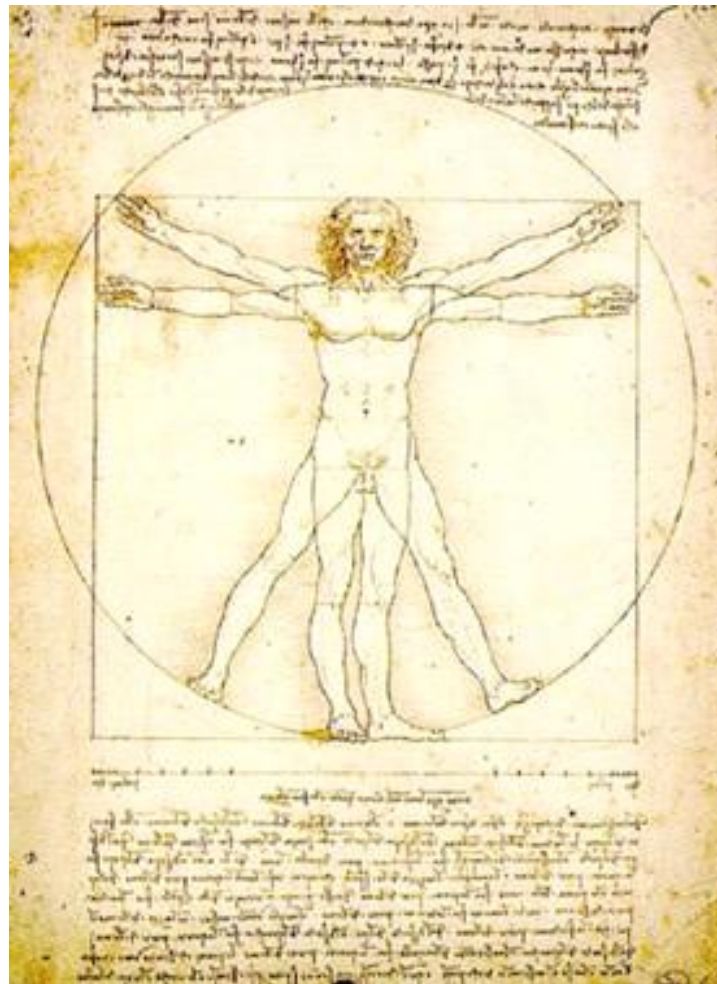


Health Sciences Department

Gettysburg College



Student Handbook

2009-2010 Academic Year

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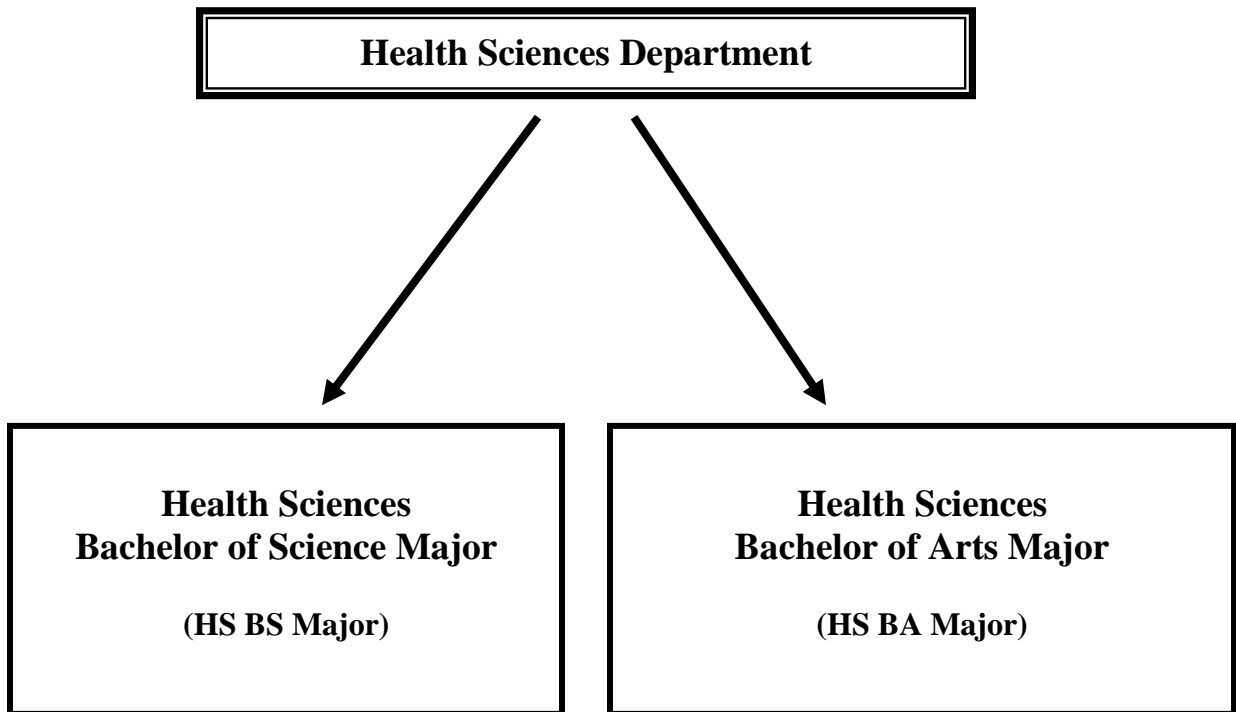
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PURPOSE OF HANDBOOK

This handbook was written to provide information for HS majors and for prospective students who are considering this major at Gettysburg College. Although the handbook answers many questions about the Health Sciences Department, it is not the only source of information that students should consult. The Gettysburg College Catalogue and Website (www.gettysburg.edu) provide valuable information about the Health Sciences Department and Gettysburg College. HS faculty advisors also serve to answer questions concerning courses and requirements for the HS major.

INTRODUCTION

The Health Sciences Department is one of the most diverse departments on campus. The multidisciplinary approach of a liberal arts education is a perfect setting for a student interested in studying the fascinating world of the human body. Students in the Health Sciences Department take courses in a variety of departments, including Biology, Chemistry, and Physics. There are two majors in the Health Sciences Department, as shown in the figure below. Students with these majors complete different sets of courses, which prepare them for different futures upon their graduation from Gettysburg College.



Health Sciences Bachelor of Science Major

Health Sciences Bachelor of Science (HS BS) majors develop a solid scientific foundation for the study of the human body, focusing on the structure and function of the body in conditions of wellness and disease. HS BS majors complete a very rigorous selection of science courses in the HS, Biology, Chemistry, and Physics Departments. The capstone experience for HS BS students is either a capstone internship or an independent research project. The required courses in this major meet the entrance requirements for medical school. Students with this major typically attend medical school or other rigorous graduate programs.

Health Sciences Bachelor of Arts Major

Health Sciences Bachelor of Arts (HS BA) majors also develop a solid scientific foundation for the study of the human body, focusing on the structure and function of the body in conditions of wellness and disease. This program includes a strong base of natural science courses, combined with human science courses. The capstone experience for HS BA students is a capstone internship. HS BA students typically go to graduate school in a variety of allied health fields, including physical therapy, physician assistant, cardiac rehabilitation, exercise physiology, nursing, occupational therapy and others.

MISSION STATEMENT

The Department of Health Sciences aspires to be a nationally recognized program for the preparation of health professionals within a liberal arts curriculum. Through the use of state-of-the-art classrooms, laboratories, and equipment, an understanding and appreciation of the human body in health and disease is cultivated. Varied experiences both in and out of the classroom prepare our students to be highly competitive in health-related academic and professional settings. As dedicated faculty members, we model a collaborative educational environment through close personal interaction with our colleagues and students. We believe this type of atmosphere creates a synergy that optimizes our collective resources. We value our students and their important role within the educational process and we demonstrate this by being approachable in and out of class, by being accessible in our offices and laboratories, and by being respectful and professional at all times. We make every effort to remain current and up to date regarding the latest developments in the dynamic field of health science. We seek to pass our desire to be lifelong learners onto those who interact with us and we demonstrate this through active participation in the college and our professional organizations.

FACILITIES

The Health Sciences Department is located on the first floor of the Science Center, which opened in the fall of 2002, and includes the following facilities:

- HS Department Common Area
- Faculty and staff offices
- Multimedia classrooms and seminar rooms
- **Human Anatomy and Physiology Lab**
The multimedia Human Anatomy and Physiology Lab is well equipped with Biopac data acquisition and analysis systems, Nikon compound microscopes, anatomical models and skeletons, as well as A.D.A.M. (Animated Dissection of Anatomy for Medicine) and PhysioEx computer software.
- **Neuromuscular Physiology Lab**
The Neuromuscular Physiology Lab is a facility set aside for faculty and student research projects. This lab is equipped with the latest and best technology for the quantification of muscular and cardiovascular parameters. The equipment available for use includes the following: Biodex Isokinetic Dynamometer, electromyography machine, 12 Lead ECG machine, Monark 834E Wingate Cycle, various dynamometers, YSI 400 Series Probe for sensing internal and external body temperature, and more.
- **Muscle Biology Lab**
The Muscle Biology Lab is equipped to study the effects of exercise and other interventions on the molecular biology of skeletal muscle and other tissues. Equipment available for use includes gel electrophoresis systems, a rodent treadmill, and electrical stimulators for muscle contraction as well as gene transfer experiments.

The Health Sciences Department also includes the following facility in the Bream-Wright-Hauser Athletic Complex:

- **Integrative Physiology Lab**
The state-of-the-art human performance lab is equipped with the latest technology in exercise physiology and biomechanics. Examples of some of the equipment available to students include Medical Graphics Cardio2 and VO2000 breath-by-breath metabolic systems, Velotron Dynafit Pro Electronic Bicycle Ergometer, Ariel 3-Dimensional Performance Analysis System (APAS), Quinton stress test EKG, Trackmaster treadmill for stress testing, a YSI lactate analyzer, a Neurometer for quantifying pain perception, and a BODPOD Body Composition tracking system.

CURRICULUM

Advising

Every first year student entering Gettysburg College is assigned a faculty advisor. If the student expresses an interest in an HS major upon entrance to the College, the student will, whenever possible, be assigned an advisor in the HS department. Any student who was not assigned an advisor in the HS department as an entering student will be assigned a new advisor in the HS department once the student declares an HS major.

Declaration of Major

Students may declare an HS major at the end of their first semester. Declaration of Major forms are available from the Registrar's Office. Students should contact the department office administrator, Joan Swisher (337-6440; jswisher@gettysburg.edu), to schedule an appointment with the department chairperson to have the Declaration of Major form signed and a new faculty advisor assigned, if necessary. It is to the student's advantage to declare an HS major as soon as possible. Failure to do so can make it difficult to complete the required courses for the major in four years.

Degree Requirements

Gettysburg College confers a Bachelor of Science or Bachelor of Arts degree in HS. The graduation requirements are as follows:

1. **32 course units** are required for graduation.
2. Only full-unit courses will count toward the total units required for graduation.
3. The standard course load will be four one-unit courses per semester.
4. Gettysburg Curriculum
 - The Gettysburg Curriculum requirements are shown on pages 8-9.
5. Major Requirements
 - The HS BS major requirements are shown on page 10.
 - The HS BA major requirements are shown on page 11.
 - **All HS Major Requirements from the HS Department must be taken at Gettysburg College.**
6. Minimum accumulative GPA of 2.00 and a GPA of 2.00 in the major field.
7. Minor Requirements
 - The HS minor requirements are shown on page 12.

Gettysburg Curriculum

MULTIPLE INQUIRIES

The Arts (1 course)

_____ Arts

Humanities (1 course)

_____ Humanities

Social Science (1 course)

_____ Social Science

Natural Sciences (2 courses, one with lab)

Biology 101 and Biology 112 are required for HS Majors

_____ Natural Sciences 1

_____ Natural Sciences 2

INTEGRATIVE THINKING

Interdisciplinary Courses (2 courses)

_____ Interdisciplinary 1

_____ Interdisciplinary 2

OR

Course Cluster (2 courses with synthetic experience clustered around common theme)

_____ Course Cluster 1

_____ Course Cluster 2

Quantitative, Inductive, and Deductive Reasoning (1 course)

_____ QIDR

Capstone Experience in Major

_____ Capstone Experience

EFFECTIVE COMMUNICATION

First Year Writing (1 course)

_____ FY Writing

Communication Conventions of the Major Field

_____ Communication Conventions

LOCAL AND GLOBAL CITIZENSHIP

Second Language (Competency must be demonstrated through the intermediate level)

_____ Second Language 1

_____ Second Language 2

_____ Second Language 3

_____ Second Language 4

Cultural Diversity (2 courses)

_____ Cultural Diversity 1 (Non-Western)

_____ Cultural Diversity 2 (Domestic/Conceptual)

Science, Technology, and Society (Applicable with class entering September 2006)

_____ STS

Health Sciences Bachelor of Science Major

(HS BS)

HS Requirements

- _____ HS 209 Human Anatomy and Physiology I
- _____ HS 210 Human Anatomy and Physiology II
- _____ Capstone Experience (Capstone Internship or HS 460 Independent Research)

HS Electives (Choose 4 courses, 2 must have lab)

- _____ HS 309 Exercise Physiology (lab)
- _____ HS 310 Assessment in the Health Sciences (lab)
- _____ HS 311 Neuromuscular Physiology (lab)
- _____ HS 312 Cardiorespiratory Physiology
- _____ HS 318 Kinesiology (lab)
- _____ HS 319 Environmental Physiology
- _____ HS 330 Advanced Nutrition
- _____ HS 376 Chronic Disease

Requirements from Other Departments

- _____ BIO 101 (General Biology 1)
- _____ BIO 112 (General Biology 2)
- _____ BIO 211 (Genetics)
- _____ BIO 212 (Cell Biology)
- _____ BIO 260 (Biostatistics)

- _____ CHEM 107 (General Chemistry 1)
- _____ CHEM 108 (General Chemistry 2)
- _____ CHEM 203 (Organic Chemistry 1)
- _____ CHEM 204 (Organic Chemistry 2)

- _____ PHY 103 (General Physics 1)
- _____ PHY 104 (General Physics 2)

***HS BS majors are required to earn a B⁻ or higher in both HS 209 and HS 210 the first time these courses are taken.**

Health Sciences Bachelor of Arts Major

(HS BA)

HS Requirements

- _____ HS 112 Foundations of Health Sciences
- _____ HS 209 Human Anatomy and Physiology I
- _____ HS 210 Human Anatomy and Physiology II
- _____ HS 230 Nutrition
- _____ HS 232 Statistics for the Health Sciences (or Math 107)
- _____ Capstone Experience (Capstone Internship)

HS Electives (Choose 4 courses, 2 must have lab)

- _____ HS 309 Exercise Physiology (lab)
- _____ HS 310 Assessment in the Health Sciences (lab)
- _____ HS 311 Neuromuscular Physiology (lab)
- _____ HS 312 Cardiorespiratory Physiology
- _____ HS 318 Kinesiology (lab)
- _____ HS 319 Environmental Physiology
- _____ HS 330 Advanced Nutrition
- _____ HS 376 Chronic Disease

Requirements from Other Departments

- _____ BIO 101 (General Biology 1)
- _____ BIO 112 (General Biology 2)

- _____ CHEM 107 (General Chemistry 1)
- _____ CHEM 108 (General Chemistry 2)

or

- _____ PHY 103 (General Physics 1)
- _____ PHY 104 (General Physics 2)

Health Sciences Minor

(HS Minor)

HS Requirements

- _____ HS 209 Human Anatomy and Physiology I
- _____ HS 210 Human Anatomy and Physiology II
- _____ HS 230 Nutrition

HS Electives (Choose 3 courses, 1 must have lab)

- _____ HS 309 Exercise Physiology (lab)
- _____ HS 310 Assessment in the Health Sciences (lab)
- _____ HS 311 Neuromuscular Physiology (lab)
- _____ HS 312 Cardiorespiratory Physiology
- _____ HS 318 Kinesiology (lab)
- _____ HS 319 Environmental Physiology
- _____ HS 330 Advanced Nutrition
- _____ HS 376 Chronic Disease

Requirements from Other Department

- _____ BIO 101 (General Biology 1)
- _____ BIO 112 (General Biology 2)

HS BS Suggested Course Sequence

First Year	
Fall Semester	Spring Semester
1. BIO 101*	1. BIO 112*
2. CHEM 107	2. CHEM 108
3.	3.
4.	4.
Sophomore Year	
Fall Semester	Spring Semester
1. HS 209*	1. HS 210*
2. BIO 211	2. BIO 212
3. CHEM 203	3. CHEM 204
4.	4.
Junior Year	
Fall Semester	Spring Semester
1. PHY 103	1. PHY 104
2. HS Elective	2. HS Elective
3.	3. BIO 260
4.	4.
Senior Year	
Fall Semester	Spring Semester
1. HS Capstone Experience	1. HS Elective
2. HS Elective	2.
3.	3.
4.	4.

* Sequence High Priority

HS BA Suggested Course Sequence

First Year	
Fall Semester	Spring Semester
1. BIO 101*	1. BIO 112*
2. HS 112	2.
3.	3.
4.	4.
Sophomore Year	
Fall Semester	Spring Semester
1. HS 209*	1. HS 210*
2. CHEM 107 or PHY 103	2. CHEM 108 or PHY 104
3. HS 230	3. HS 232
4.	4.
Junior Year	
Fall Semester	Spring Semester
1. HS Elective	1. HS Elective
2.	2.
3.	3.
4.	4.
Senior Year	
Fall Semester	Spring Semester
1. HS Capstone Experience	1. HS Elective
2. HS Elective	2.
3.	3.
4.	4.

* Sequence High Priority

HS Minor Suggested Course Sequence

First Year	
Fall Semester	Spring Semester
1. BIO 101*	1. BIO 112*
2.	2.
3.	3.
4.	4.
Sophomore Year	
Fall Semester	Spring Semester
1. HS 209*	1. HS 210*
2. HS 230	2.
3.	3.
4.	4.
Junior Year	
Fall Semester	Spring Semester
1. HS Elective	1. HS Elective
2.	2.
3.	3.
4.	4.
Senior Year	
Fall Semester	Spring Semester
1. HS Elective	1.
2.	2.
3.	3.
4.	4.

* Sequence High Priority

Internship Information and Requirements

Why Do An Internship?

Through the Center for Career Development and the HS Department, HS majors have the opportunity to participate in an internship experience. Internships allow students to gain experience in their chosen career field, and can sometimes lead to networking or employment opportunities after graduation. Students are encouraged to begin the process of finding an internship early in their sophomore year. Information on thousands of internship sites located in both the United States and abroad is located in the Center for Career Development. The Center staff also will assist students in looking for an internship site close to a student's home.

General Information

1. Student must be a major or minor in the HS Department or have a special major closely affiliated with the HS Department.
2. A minimum GPA of 2.5 in the HS major is required.
3. The internship may be done over the summer (HS 475) or during the academic year (HS 473). Summer internship credit will be awarded in the following fall semester.
4. One academic credit per 160-hour internship will be granted if all requirements are met.
5. The internship will be graded S/U.
6. All internship students must first register with the Center for Career Development Office located at 53 Stevens Street. A Learning Contract and Course Registration Form must be completed before internship is approved.
7. The HS Internship Coordinator must formally approve the internship at least one month before the end of the semester preceding the internship. The Coordinator's Office is located in the Science Center room 148.
8. Students may do up to three HS internships.
9. The internship must be closely related to the HS department. In the past, HS students have done internships in the following settings: physical therapy, occupational therapy, athletic training, exercise physiology, physician assistant, and cardiac rehabilitation.

Internship Requirements

1. **HOURS-** The student must complete 160 hours at the internship site for one credit.
2. **JOURNAL-** The student must maintain a daily journal. The journal must be typed, double-spaced, and include the dates and hours the student worked, experiences, thoughts, and personal contacts.
3. **RESEARCH PAPER-** The student must write a ten-page research paper on a topic that is relevant to the internship. The research paper must be typed, double-spaced, include title page and reference list. The paper must be properly referenced.
4. **CASE STUDY-** The student must complete one case study. The student should choose an individual (i.e. patient or client) that he or she has worked closely with and report that individual's history, treatment and prognosis. The case study must be typed and double-spaced.
5. **REFLECTIVE ESSAY-** The student will write an essay reflective upon their internship experience and future career ambitions. The student will be as specific as possible making connections among the courses they have taken the philosophies they have formed, and the experiences they have encountered. Essay shall be a minimum of three pages, double-spaced.
6. **NOTEBOOK-** The student will develop an internship notebook. All written assignments shall be triple hole punched and placed in a three-ring binder with each section separated by file tabs.
7. **EVALUATIONS-** At the end of the internship, the student must complete the Student Evaluation Form. The on-site internship supervisor must complete the Supervisor Evaluation Form. Both evaluation forms must be returned to the Center for Career Development Office located at 53 West Stevens Street.

8. TIMELINE-

Before Internship

- Internship approved by Center for Career Development Office and HS Department.
- Learning Contract and Course Registration Form due to Center for Career Development Office one month before internship begins.

After Internship

- HS Internship Coordinator receives the notebook which contains the daily journal, research paper, case study and reflective essay.
 - September 15 deadline for Summer Internship.
 - Two weeks before end of semester for Fall and Spring Semester Internships.
- Center for Career Development at 53 West Stevens Street receives Student Evaluation Form and Supervisor Evaluation Form two weeks after completion of internship.

Additional information about internships may be found on the Center for Career Development Website (www.gettysburg.edu).

Capstone Internship Information and Requirements

Why Do a Capstone Internship?

Through the Center for Career Development and the HS Department, HS majors have the opportunity to participate in a capstone internship experience.

A capstone internship will provide evidence that the student has mastered significant content in the major and will ask students to demonstrate effective, discipline specific communication skills. It affirms the goal that every Gettysburg College student achieves this level of intellectual mastery and integration.

General Information

1. The capstone internship typically is completed the summer between the junior and senior year (HS 478). Special approval from the HS Internship Coordinator may be approved for a capstone internship to be completed during the fall or spring semester of the senior year (HS 476).
2. One academic credit will be granted for the 160-hour capstone internship if all requirements are met.
3. The capstone internship will be graded A-F.
4. All capstone internship students must first register with the Center for Career Development at 53 Stevens Street. A Learning Contract and Course Registration Form must be completed before the internship is approved.
5. The HS Internship Coordinator (Science Center Room 148) and the Capstone Internship Site Supervisor must formally approve the internship at least one month before the end of the semester preceding the internship. Approval of the internship will be based on a written proposal from the student.
6. The capstone internship must be closely related to the HS Department. In the past, HS students have done internships in the following settings: physical therapy, occupational therapy, athletic training, exercise physiology, physician assistant, and cardiac rehabilitation.

Capstone Internship Requirements

1. **WRITTEN PROPOSAL PRIOR TO INTERNSHIP**-The student must complete a written proposal detailing the objectives to be met during the internship and the specific activities that will be carried out to meet these objectives. This written proposal must be submitted to and approved by the HS Internship Coordinator (Science Center Room 148) at least one month before the end of the semester preceding the internship.
2. **LEARNING CONTRACT AND COURSE REGISTRATION FORM**-The learning contract and course registration form are due by the last day of classes. The learning contract is submitted to the Center for Career Development. The course registration form is submitted to the Registrar.
3. **HOURS**-The student must complete a minimum of 160 hours at the internship site.
4. **JOURNAL**-The student must maintain a weekly journal. The journal must be typed, double-spaced, and include the dates and hours the student worked, experiences, thoughts, and personal contacts.
5. **MAJOR PROJECT**-Within two weeks of starting the capstone internship, the student must give a written proposal for a major project to the Capstone Internship Site Supervisor and the HS Internship Coordinator for approval. The major project will depend on the location of the capstone internship and the interests of the student and the Capstone Internship Site Supervisor. Possible major projects include:
 - Major Research Paper-40-50 pages on average on a topic that is relevant to the internship. The paper must be properly referenced.
 - Developing a manual to run a fitness center
 - Writing a grant proposal for the internship site
 - Developing a major program for the internship site
 - Implementing a major program (such as a wellness program) at the internship site
 - Developing a comprehensive website on a topic that is relevant to the internship
6. **INDIVIDUAL PRESENTATION TO HS DEPARTMENT**-The student must give a professional power point or poster presentation to the faculty and students of the HS Department. The HS Internship Coordinator must approve the presentation and will notify the student of the date and time for the presentation.

7. **REFLECTIVE ESSAY-** The student will write an essay reflective on his/her capstone internship experience and future career ambitions. The student will be as specific as possible making connections among the courses taken, the philosophies formed, and the experiences encountered. Essay shall be a minimum of three pages, double-spaced.
8. **NOTEBOOK-** The student will develop a capstone notebook. All written assignments shall be triple hole punched and placed in a three-ring binder with each section separated by file tabs.
9. **EVALUATION-**At the end of the internship, the student must complete the Student Evaluation Form. The Capstone Internship Site Supervisor must complete the Supervisor Evaluation Form. Both evaluation forms must be returned to the Center for Career Development located at 53 Stevens Street.
10. **TIMELINE-**

Before Internship

- Written proposal submitted to the HS Internship Coordinator (Science Center Room 148) at least one month before the end of the semester preceding the internship for approval.
- Internship approved by HS Internship Coordinator, Capstone Internship Site Supervisor and the Center for Career Development.
- Learning Contract and Course Registration Form due by last day of classes.

During Internship

- Written proposal for major project will be submitted to Capstone Internship Site Supervisor and HS Internship Coordinator for approval within two weeks of starting capstone internship.
- Maintain journal.
- Complete major project.
- Complete reflection essay.
- Complete and send back the student evaluation form from Center for Career Development.

After Internship

- HS Internship Coordinator receives the notebook which contains the journal, major project and reflective essay.
 - September 18 deadline for summer internship.
 - Two weeks before end of semester for fall and spring semester internships.
- Student gives individual professional presentation to the HS Department.

COURSES AND DESCRIPTIONS

HS 112 - Foundations of Health Sciences

Examination and analysis of the health care system in the United States and the diversity of career options available within the health sciences. Course explores social, ethical, and political issues related to the health sciences. *Prerequisite:* Majors only or prospective majors.

HS 209 - Human Anatomy and Physiology I

Systems approach to study the structure and function of the human body. Emphasis is placed on the levels of organization within the human body, and the anatomy and physiology of the integumentary, skeletal, muscular and nervous systems. The remaining systems are covered in HS 210. *Prerequisites:* Biology 101 or 111 and Biology 112.

HS 210 - Human Anatomy and Physiology II

Systems approach is used to study the structure and function of the human body. Emphasis is placed on the anatomy and physiology of the cardiovascular, lymphatic, respiratory, urinary, digestive, reproductive, and endocrine systems of the human body. The remaining systems are covered in HS 209. *Prerequisites:* Biology 101 or 111 and Biology 112.

HS 224 - Introduction to Disability Studies

Examination and analysis of disability within the context of diversity. Through interdisciplinary interchange and experiential learning, this course explores the biological, medical, social, cultural, political, technological and economic determinants of disability.

HS 230 - Nutrition

An integrated overview of human nutrition. Emphasis is placed on understanding how dietary choices impact general health and the development of chronic diseases. *Prerequisite:* Biology 101 or 111

HS 232 – Statistics for the Health Sciences

An introduction to statistical methods commonly employed in the health sciences. Emphasis is placed on descriptive statistics, fundamental probability theory, and hypothesis testing, and how to use common statistical software packages to perform these statistics.

HS 242 Biomechanics and Ergonomics

Study of the science that investigates the mechanics of the human body at rest or in motion. Course covers basic mechanical principles of statics and dynamics and application of these in the analysis of human motion. Ergonomics is the application of scientific information concerning humans to the design of objects, systems and environment for human use. Laboratory experiences include a 3-D analysis of human motion.

HS 309 - Exercise Physiology

Study of integration of the body systems in performance of exercise and work. Both acute and chronic stresses are considered. Performance of physical work under environmental stress situations is covered. Laboratory experiences include the measurement of physiological parameters under a variety of exercise conditions.

Prerequisites: HS 209 and HS 210

HS 310 – Assessment in the Health Sciences

A practical and theoretical overview of various physical assessments related to health and disease. Students learn the underlying physiological basis for different assessment techniques as well as the practical skills needed to perform and interpret them. Emphasis is placed on understanding the underlying technology and methodology used for each technique.

Prerequisites: HS 209 and HS 210

HS 311 Neuromuscular Physiology

An examination of the neurological and physiological properties of skeletal muscle. An emphasis is placed on the structural adaptation caused by use and disuse as well as exposure to acute and chronic stimuli. Students gain an in depth understanding of a variety of topics related to skeletal muscle, including: skeletal muscle microstructure, temporal summation, excitation-contraction coupling, isokinetics, force-velocity dynamics, fiber typing, electrical stimulation, and immobilization. *Prerequisites:* HS 209 and HS 210

HS 312 Cardiorespiratory Physiology

In depth study of the structure and function of the cardiovascular and respiratory systems. Special attention will be given to the integrated function of the two systems, both in normal and pathological states. *Prerequisites:* HS 209 and HS 210

HS 318 - Kinesiology

Examination of the interaction of the skeletal, muscular, and nervous systems that create movement. Areas of study include the osteology, arthrology, myology, and neurology of the head, neck, trunk, and limbs. Various skills will be analyzed to determine joint motion, types of muscle contraction, and involved muscles. *Prerequisites:* HS 209 and HS 210

HS 330 Advanced Nutrition and Human Metabolism

Study of the physiological function and metabolic fate of carbohydrates, lipids, and proteins and their involvement in fulfilling energy needs for maintenance, growth, and work. Specific topics include the various pathways by which nutrients are stored, accessed and oxidized to provide energy; how exercise and disease affects these systems; the role of hormones and enzymes in regulating energy balance and substrate utilization; the role of diet and energy balance in metabolic syndrome X, obesity and other prevalent lifestyle diseases. *Prerequisite:* HS 230

HS 376 –Chronic Disease

Course examines chronic diseases, which are the leading cause of morbidity and mortality in the United States. Course specifically focuses on cardiovascular diseases, cancer, stroke, chronic respiratory diseases, and diabetes mellitus.

Prerequisites: HS 209 and HS 210

HS 460 – Individualized Study: Research

Independent investigation of a topic of special interest, including both literature and laboratory/field research. An oral presentation to the department and a written thesis are required. *Prerequisite:* BIO 260

HS 473 Individualized Study: Internship

Independent internship experience under the direct supervision of professional personnel in a variety of HS-related areas. Internship must be approved by the Center for Career Development and the HS Department Internship Coordinator. Graded S/U.

HS 475 Individualized Study: Internship (Summer)

Independent internship experience under the direct supervision of professional personnel in a variety of HS-related areas. Internship must be approved by the Center for Career Development and the HS Department Internship Coordinator. Graded S/U.

HS 476 Individualized Study: Capstone Internship

Independent internship experience under the direct supervision of professional personnel in a variety of HS-related areas. Internship must be approved by the Center for Career Development and the HS Department Internship Coordinator. Graded A-F.

HS 478 Individualized Study: Capstone Internship (Summer)

Independent internship experience under the direct supervision of professional personnel in a variety of HS-related areas. Internship must be approved by the Center for Career Development and the HS Department Internship Coordinator. Graded A-F.

Courses by Semester 2009/2010 Academic Year

Fall 2009

HS 112	Foundations of Health Sciences
HS 209	Human Anatomy and Physiology I
HS 224	Introduction to Disability Studies
HS 230	Nutrition
HS 309	Exercise Physiology
HS 376	Chronic Disease

Spring 2010

HS 112	Foundations of Health Sciences
HS 210	Human Anatomy and Physiology II
HS 224	Introduction to Disability Studies
HS 230	Nutrition
HS 232	Statistics in the Health Sciences
HS 310	Assessment in the Health Sciences
HS 311	Neuromuscular Physiology
HS 312	Cardiorespiratory Physiology
HS 318	Kinesiology
HS 330	Advanced Nutrition and Human Metabolism

SPECIAL OPPORTUNITIES

Research Assistants

Students have the opportunity to collaborate with HS faculty members on various projects led by the HS faculty. These collaborative projects often lead to publications or presentations for the students involved. Since faculty members are constantly proposing and implementing different research projects, interested students should make an appointment with the HS department chairperson to determine which opportunities might best suit their personal goals.

Lab Assistants

Numerous courses in the HS department have labs associated with them. Select upper-class students have the opportunity to assist faculty members in teaching these labs.

Health Professions Club

The Health Professions Club is an active pre-professional association for Gettysburg College students with an interest in medicine and other health professions. It sponsors guest lectures on a variety of topics centering around careers in the health professions, organizes field trips, and serves as a support group for students interested in the health professions.

GRADUATE SCHOOL AND CAREER INFORMATION

Health Professions Advising

Gettysburg College offers a comprehensive, four-year advising program for students interested in pursuing a career in the health professions. Dr. Kristin Stuempfle from the HS Department is the campus Health Professions Advisor. She offers individual and group advising, chairs the Health Professions Committee, and serves as the advisor for the Health Professions Club.

Advising is available for the following health professions:

- Allopathic medicine
- Osteopathic medicine
- Dentistry
- Veterinary medicine
- Optometry
- Pharmacy
- Podiatric medicine
- Public health
- Orthotics and prosthetics
- Chiropractic
- Physical therapy
- Occupational therapy
- Physician assistant
- Nursing
- Athletic training

For more information about health professions advising, please visit http://www.gettysburg.edu/academics/health_professions/index.html.

The Center for Career Development

The Center for Career Development at Gettysburg College helps students make informed career decisions and assists them with turning those decisions into actions. Students are encouraged to take advantage of the Center for Career Development's resources and services throughout their time at Gettysburg College.

For more information about the Center for Career Development, please visit http://www.gettysburg.edu/about/offices/college_life/career_development/.

Course Requirements for Graduate School

Because of the diversity of graduate and professional schools attended by HS majors, it is critical that each student carefully examine course requirements for specific programs in which the student is interested. It is important to do this early during a student's time at Gettysburg College so that the appropriate courses can be planned into the student's schedule.

Admission Tests for Graduate School

Admission to graduate and professional schools frequently requires the completion of a standardized examination, such as the GRE (graduate school), MCAT (medical school), DAT (dental school), PCAT (pharmacy school), or OAT (optometry school). Students should be aware of their program's requirements, and should schedule the examination at the appropriate time.

Our Graduates

Students graduating with a major in HS have unlimited graduate school and career opportunities. Examples of some of our recent graduates are listed below:

Dana Girty	2010	Nursing school	Johns Hopkins University
Allison Brown	2010	Nursing school	Johns Hopkins University
Alyson Heller	2009	Nutrition graduate school	St. Louis University
Kevin Gentile	2009	Clinical exercise physiology school	East Stroudsburg University
Kim Crouse	2009	Nursing school	Johns Hopkins University
Kate Judd	2009	Law school	Seton Hall
Ghislaine Cedeno	2009	Nursing school	Johns Hopkins University
Megan Graham	2009	Public health graduate school	Emory University
Kristin Faulhaber	2009	Physician assistant school	Arcadia University
Erin Ober	2009	Physical therapy school	University of Maryland
Sarah Andryauskas	2009	Nursing school	Johns Hopkins University
Amy Hoffman	2008	Nursing and public health school	Johns Hopkins University
Shannon Yates	2008	Nutrition graduate school	University of New Hampshire
Lauren Carter	2008	Physical therapy school	UMDNJ
Jane D'Addario	2008	Nursing school	Jefferson University
Christine Burke	2008	Physical therapy school	Arcadia University
James DeVincenzi	2008	Exercise physiology graduate school	East Stroudsburg University
Ryan Jannos	2008	Admissions counselor	Gettysburg College
Allie Sfekas	2008	Physical therapy school	University of Maryland
Megan Moyer	2008	Occupational therapy graduate school	Tufts University
Ali Stoll	2008	Physical therapy school	Mass. General Hospital
Joe Garrett	2008	Exercise physiology graduate school	Columbia University
Jamie Giffuni	2008	Exercise physiology graduate school	UNC-Chapel Hill
Kirsten Morford	2008	Occupational therapy graduate school	Jefferson University
Jess Androski	2008	Public health graduate school	Johns Hopkins University
Beth Klein	2008	Occupational therapy graduate school	Towson University
Katie Yamamoto	2007	Clinical exercise physiology school	Wake Forest University
Erin Ozdogan	2007	Physician assistant school	George Washington
Nicole Holuba	2007	Nursing school	Johns Hopkins University
Megan Thompson	2007	Physician assistant school	Pace University
Marisa McNeal	2007	Medical school	LECOM
Courtney Jamieson	2007	Physical therapy school	Nazareth College
Erika Hempey	2007	Chiropractic school	Logan College of Chiropractic
Craig Borger	2007	Chiropractic school	New York Chiropractic College
Caitlyn Barr	2007	Physical therapy school	George Washington University
Jessica Moon	2007	Nursing school	Johns Hopkins University
Matt Sundquist	2007	Nursing school	Jefferson University
Glenn Cain	2007	Exercise physiology graduate school	Springfield University
Joe Bonyai	2007	Exercise physiology graduate school	Springfield University
Cassandra Cochran	2007	Native English Speaker ESL Teacher	Maximo Nivel, Peru
Michele Broesler	2007	Management	Plus One Health Management
Kelli Clair	2007	Physician assistant school	George Washington

Joe Kember	2007	Physical therapy school	Jefferson University
Dan Thabet	2007	Physical therapy school	Stony Brook
Laurie Maurer	2006	MA in Medical Anthropology	University of Pennsylvania
Joshua VanBeverhoudt	2006	Neurophysiology technologist	Temple University
Bob Koernig	2006	Nursing school	Fairleigh Dickinson University
John Benedetto	2006	Physical therapy school	UMDNJ
Graham Foose	2006	Medical school	LECOM
Katie Ferraro	2006	Physical therapy school	University of Scranton
Julia Hansen	2006	Nursing school	Johns Hopkins University
Caleb Seufert	2006	Post Bac Premedical Program	Penn State University
Julianna Lilly	2006	Nursing school	University of Maryland
Margaret Hallahan	2006	Medical school	LECOM
Jen Conder	2006	Nursing school	Duquesne University
Becki Cannon	2006	Physician assistant school	Chatham College
Mike Schmidt	2006	Marine Corps	
Larissa Stathakes	2006	Physician assistant school	Seton Hall University
James O'Brien	2006	Medical school	Ross University
Roxanna Hernandez	2006	Public health graduate school	George Washington University
Alicia Smith	2005	Nursing school	Harford Community College
Melanie Tortora	2005	Biomedical Sciences Masters Program	Barry University
Natasha Weston	2005	Nursing school	UMDNJ
Anita Frances Okoh	2005	Public health graduate school	Emory University
Liz Stanton	2005	Physician assistant school	Midwestern University
Kate Greenwood	2005	Nursing school	Johns Hopkins University
Erin Corley	2005	Physician assistant school	PCOM
Ali Hertell	2005	Exercise physiology graduate school	Northeastern University
Deanna Kloss	2005	Physical therapy school	Arcadia University
Emily McGlashon	2005	Nursing school	Johns Hopkins University
Bonnie O'Brien	2005	Nursing school	Johns Hopkins University
Matt Orange	2005	PhD Physiology	Rutgers/UMDNJ
Matt Smith	2005	Physical therapy school	Drexel University
Adrienne Lampe	2005	Admissions officer	Mount St. Mary's University
Molly Kastendieck	2005	Higher education administration	George Washington University
Jeff Lukacsko	2005	Residential counselor	Metro. Atlanta Serenity House
Steph Morano	2005	Public health graduate school	Drexel University
Peter Lindley	2004	Nursing school	University of Nevada, Reno
Jenny Rexon	2004	Physical therapist	NovaCare Rehabilitation
KeriAnn VanNostrand	2004	Medical school	West Virginia University
Heather Wahila	2004	Exercise physiology graduate school	Ithaca College
Luke Piretti	2004	Chiropractic school	Parker College of Chiropractic
Becky Malinowski	2004	Physician assistant school	Baylor University
Angie Hill	2004	Nursing school	Johns Hopkins University
Luke Cady	2004	MA in German studies	Middlebury College
Nevin Markel	2004	Chiropractic school	New York Chiropractic College
Mei Ng	2004	PhD Clinical psychology (health psych.)	Ohio University
Joe Cacciatore	2004	MS in Athletic training	Plymouth State University
Lynn Groon	2004	Health educator	Cape May County Health Dept.
Steve Pshenishny	2004	Nuclear medicine graduate school	UC San Diego
Stephanie Shull	2004	Physician assistant school	Drexel University

Mark Turshen	2003	Medical school	Tufts University
Kate Aumann	2003	Athletic training graduate school	University of Virginia
Faith Augrom	2003	Exercise physiology graduate school	University of Maryland
Gina Davis	2003	Nursing school	Johns Hopkins University
Steve Kareha	2003	Physical therapy school	Arcadia University
Cliff Mason	2003	PhD Pharmaceutical sciences	University of Maryland
Alexis McFarland	2003	Nursing school	Johns Hopkins University
Leigh Sacks	2003	Physical therapy school	Chatham College
Valerie Silver	2003	Physical therapy school	Arcadia University
Lisa Hawkins	2003	Occupational therapy school	Tufts University
Sarah Buckley	2003	Nursing school	Jefferson University
Mike Bruno	2003	Physical therapy school	Arcadia University
Robin Shannon	2003	Cardiac rehabilitation graduate school	East Stroudsburg U.
James Miller	2003	Physical therapy school	Chapman University
Stephanie Robinson	2003	Public health graduate school	University of Maryland
Julia Girman	2003	Exercise physiology graduate school	Springfield University
Kristin Petrovia	2002	Computer analyst	Social Security Administration
Kayleen McLaughlin	2002	Occupational therapist	New England Sinai Rehab Hosp.
Craig Cimini	2002	Orthotist	Boston Children's Hospital
Katie Havens	2002	Physician assistant school	Baylor University
Courtney Hoffman	2002	Athletic training graduate school	U. of North Carolina
Steph Drevna	2002	Physical therapy school	U. of North Carolina
Amanda Wilson	2002	Research coordinator	Active Living Research
Erin Hayden	2002	Medical school	PCOM
Bridget Smith	2002	Pharmacy school	Temple University
Cody Bowers	2002	Podiatry school	Temple University
Kristin Roberts	2002	MA in Communication	Marquette University
Adrienne Lukowski	2002	Graduate school in health sciences	Johns Hopkins University
Kelsey Williams	2002	Optometry school	S. Cal. College of Optometry
Amy Keeley	2002	Nursing school	Thomas Jefferson University
Suzy Lynch	2002	Physical therapy school	Mass. General Hospital
Steve Wylie	2002	Dental school	Temple University
Karyn Pilling	2001	Physical therapy school	New York University
Misty Schmidt	2001	Physician assistant school	Hahnemann University
Jeff Ellis	2001	Head athletic trainer	Cardinal O'Hara High School
David Cirelli	2001	Research technician	Wyeth Pharmaceutical
Megan Campbell	2001	Nursing school	Mass. General Hospital
Lisa Schechet	2001	Nursing school	Johns Hopkins University
Brian Wallace	2001	Fitness center manager	SUNY Oswego
Sarah Payne	2001	Nursing school	Johns Hopkins University
Tom Boob	2001	Physical therapy school	Shenandoah University
Kelli Dodge	2001	Athletic trainer	State U. of New York
Drew Chiesa	2001	Medical school	PCOM
Chris Anne Beardslee	2001	Special programs coordinator	RESULTS Therapy and Fitness
William Gunnett	2001	Orthopedic Surgeon Physician Assistant	Chambersburg, PA
Megan McDonald	2000	Cancer information service dept.	Fox Chase Cancer Center
Karyn Miller	2000	Physician assistant school	PCOM
Matt Desmond	2000	Exercise physiology graduate school	George Washington U.
Allison Rupp	2000	Occupational therapy school	Boston University
Melissa Hazzard	2000	Exercise physiology graduate school	U. of New Hampshire

Dan Sirpenski	2000	High school biology teacher	Boston, MA
Lauren Morrell	2000	Medical school	PCOM
Quan Ma	2000	Dental school	Temple University
Krista Moyer	2000	Nurse	University of Pennsylvania
Jody Noel	2000	Exercise physiologist	Hanover Medical Fitness Center
Christine Sedlacko	2000	High school biology teacher	Hanover, PA
Jessica Delfin	2000	Program director	The Fitness Edge
Terri Ennis	2000	Athletic training graduate school	Temple University
Brian Heldibridle	2000	Cardiovascular invasive specialist	York Hospital
Craig Kemmlein	2000	Athletic training graduate school	Barry University
Ryan Napp	2000	Chiropractic school	Life University
Melissa Wolgemuth	2000	Case manager	Balt Assoc. Retarded Citizens
Andi Therit	2000	Physical therapy school	Hahnemann University
Amy Stambaugh	2000	Physical therapy school	Emory University

HONORS AND AWARDS

- **Departmental Honors in Health Sciences**
Seniors who have achieved a 3.8 major GPA, a 3.5 overall GPA, and who have demonstrated exceptional interest and dedication to their studies will receive Departmental Honors.
- **Grace C. Kenney Award**
Created to honor Grace C. Kenney, an educator for 39 years at Gettysburg College, to be given to a junior or senior. First preference is given to a student who has participated in health sciences studies, intramural and athletic programs, and has demonstrated the highest academic accomplishments and leadership skills.
- **C. E. and Mary G. Bilheimer Award**
Given to the senior major in health sciences with the highest academic average.

FACULTY AND STAFF

Faculty

Josef Brandauer, Assistant Professor of Health Sciences, completed his undergraduate work in Austria and his M.A. and Ph.D. at the University of Maryland. He completed a post-doctoral position at the Joslin Diabetes Center in Boston. He teaches Cardiorespiratory Physiology, Human Anatomy and Physiology I and II, and Statistics for the Health Sciences. His current research interests include the role of skeletal muscle in endocrine modulation of insulin sensitivity during exercise.

Daniel G. Drury, Co-Chairperson and Associate Professor of Health Sciences, was awarded his B.S. from Frostburg State University, his M.A. from George Washington University, and his D.P.E. from Springfield College. He teaches Exercise Physiology, and Neuromuscular Physiology. His current research interests are in neuromuscular aspects of peak performance and how pain perception is altered during and after exercise.

Eric E. Noreen, Assistant Professor of Health Sciences, was awarded his B.S. from the University of Wisconsin-Eau Claire, his M.S. from Colorado State University, and his Ph.D. from the University of Western Ontario. He teaches Nutrition, Advanced Nutrition and Human Metabolism, and Assessment in the Health Sciences. His research interests include nutrition in health and exercise performance, with an emphasis on the effects of dietary fish oil on metabolism.

David F. Petrie, Lecturer in Health Sciences, graduated from Gettysburg College and received his M.S. from the University of Delaware. He teaches Human Anatomy and Physiology labs, Exercise Physiology labs, and Health Assessment labs. He is the HS Internship Coordinator.

Kristin J. Stuempfle, Co-Chairperson and Associate Professor of Health Sciences, received her B.S. from Ursinus College, and her Ph.D. from the Pennsylvania State University College of Medicine. She teaches Human Anatomy and Physiology I and II and Chronic Disease. Her research interests include hyponatremia and performance in extreme environments. She is the campus Health Professions Advisor.

Cindy T. Wright, Lecturer in Health Sciences, completed her B.S. at the State University of New York at Cortland and her M.S. at the University of Utah. She teaches Foundations of HS and Introduction to Disability Studies. She is the HS Capstone Internship Coordinator.

Part-Time Faculty

Renee A. Lehman, Adjunct Instructor in Health Sciences, obtained her B.S. from the Pennsylvania State University, and she received M.S. degrees from the University of Illinois at Urbana-Champaign and the University of Rhode Island. She teaches Kinesiology and a First Year Seminar in Complementary Medicine.

Administrative Staff

Joan Swisher, Administrative Academic Assistant, has worked for Gettysburg College since 1980. She currently coordinates the clerical and administrative duties of the Health Sciences Department.

CONTACT INFORMATION

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