

Honors-in-Discipline Check sheet for Health Sciences and Microbiology

Name: _____; Student ID: _____

Course	Offered	Credits	Semester taken
HSCI 3000-088 Human Anatomy	Fall, Spring & Summer	4	
HSCI 3020-088 Human Physiology	Fall, Spring, & Summer	4	
HSCI 3030-088 Intro to Biochemistry	Fall	4	
HSCI 3046-088 Human Genetics	Spring	3	
HSCI 3400-088 Biomedical Techniques	Spring	3	
HSCI 3510-088 Pathogenic Microbiology	Fall & Spring	4	
HSCI 3540-088 Immunology	Spring	3	
HSCI 4067-088 Neurology	Spring (odd years)	4	
HSCI 4480-088 Clinical Parasitology	Spring (even years)	4	
HSCI 4607-088 Bacterial Physiology	Spring	4	
HSCI 4730-088 Mole Micro Genetics	Fall	3	
	Total Credits		

I. Number of Credit Hours required

The HSCI honors program will consist of a minimum of 18 credits, including 12-15 credits of HSCI honors enriched courses and 3-6 credits of honors thesis research.

II. Types of Courses

Honors-enriched Courses (minimum 10 credits): Several HSCI upper level and some lower level courses will be enriched with an addition of a variety of experimental and/or theoretical project components specifically designed to expose an honors student to a higher level of learning experience.

Honors Biomedical Techniques (3 credits): Introduces students to laboratory skills that utilize equipment, technology, and skilled techniques commonly found in cellular and molecular biomedical sciences. Topics may include nucleic acid and protein experimentation to investigate human health and disease.

Honors Thesis Research (36 credits). Students will identify and initiate a research project appropriate for the Honors Thesis. An Honors thesis may be completed based on either an experimental (6 credit hours) or a theoretical (3 credit hours) research problem.

III. Course Descriptions

Honors-Enriched Courses

HSCI 3000-088 Honors Human Anatomy (4 credits):

(Prerequisite: General biology). A study of the human body with an emphasis on functional gross anatomy is presented to facilitate an understanding of body structure and function. Laboratory provides a learning experience through the use of anatomical specimens, models, and charts. Six hours lecture and lab combined per week.

HSCI 3020-088 Honors Human Physiology (4 credits):

(Prerequisite: HSCI 3000). A study of the homeostatic mechanisms in man as they pertain to normal physiology and mechanisms of disease. The teaching laboratory provides the students an opportunity to learn by measuring many of the vital physiological processes. Three hours lecture and lab per week.

HSCI 3030-088 Honors Introduction to Biochemistry (4 credits):

(Prerequisite: CHEM 1110/11 and CHEM 1120/21). An introduction to general biochemistry of eukaryotic and prokaryotic cells. Includes study of the cell chemistry, mechanisms of energy production, enzymes, basics of macromolecular structures and transcription and translation of genetic information. Laboratory includes techniques involved in studying the biochemistry of cells. Three hours lecture and three hours laboratory per week.

HSCI 3510-088 Honors Pathogenic Microbiology (4 credits):

(Prerequisite: HSCI 3320 General Microbiology). A lecture and lab course presenting the key concepts and mechanisms of the infectious disease process and its prevention and control with an emphasis on bacterial pathogens and how they cause disease. In addition, the laboratory component is designed to introduce the student to the basic techniques for the isolation and identification of pathogenic bacteria.

HSCI 3540-088 Honors Immunology (3 credits):

A lecture presenting current concepts of the basic mechanisms of immunity and selected laboratory techniques to study the development of the immune response.

HSCI 4067-088 Honors Neurology (4 credits):

(Prerequisites: HSCI 3000 and HSCI 3020). A basic study of human neuroanatomy and neurophysiology. This course explores the motor and sensory pathways, as well as the integration systems of the central nervous system. Laboratory work utilizes preserved human specimens, models, slides and charts. Two hours lectures and two 2hour labs per week.

HSCI 4480-088 Honors Clinical Parasitology (4 credits):

(Prerequisites: One year of biological science or equivalent.) Lecture and discussion of parasites of public health importance Life cycles, pathology, and diagnostic stages are

emphasized Standard procedures of specimen collection, staining, concentration, and parasite identification are studied in the laboratory Two hours lecture and (2) two-hour labs per week.

HSCI 4607-088 Honors Bacterial Physiology (4 credits): (Prerequisites: HSCI 3320 and Organic Chemistry required. Completion of a biochemistry course is recommended).

A consideration of the microorganisms. Includes biochemical nature of the growth of studies of bacterial cytology, enzymes, nutritional requirements, metabolic pathways, and genetic regulation. Laboratory includes studies of selected aspects of metabolism during bacterial growth and the use of bacterial vectors for cloning DNA. Two hours lecture and three hours laboratory per week.

HSCI 4730-088 Honors Molecular and Microbial Genetics (3 credits): (Prerequisite(s): HSCI 3320).

An introduction to microbial genetics, focusing on the genetics and molecular biology of bacteria and bacteriophages. The course will include basic techniques of microbial genetics and gene manipulation with emphasis on the application of molecular genetics in basic and applied research.

HSCI 4770-088 Honors Virology (4 credits): Prerequisite(s): HSCI 3320 or equivalent).

An introduction to the pathogenesis and molecular biology of viruses including methods of isolation, cultivation, and characterization. Two hours lecture and two 2hour labs per week.

HSCI 3400-088 Honors Biomedical Techniques (3 credits): Prerequisites: Permission of instructor.

Introduces students to laboratory skills that utilize equipment, technology, and skilled techniques commonly found in cellular and molecular biomedical sciences. Topics may include nucleic acid and protein experimentation to investigate human health and disease.

HSCI 4018 Honors Thesis (3-6 credits):

The Department of Health Sciences will require the completion of an honors thesis (HSCI 4018) as the capstone course. A faculty member in the Department of Health Sciences, chosen by the student, will direct the thesis project. Two additional faculty members, one from Health Sciences and one from outside the Department, will serve on an advisory committee with the project director and also act as readers of the thesis. A formal thesis will be submitted and publicly presented at the project's conclusion. This presentation may be at the ETSU Boland Undergraduate Research Symposium during the spring semester. Regardless of when the public presentation is made, the thesis must have been read by the three readers prior to the presentation. A minimum of two of the thesis readers must be present at the presentation. Announcements regarding the

presentation must be posted a minimum of 2 weeks prior to the presentation. A student must make a B or higher in the honors thesis to get honor recognition on their transcript.

IV. Specific Honors-Enriched Course Requirements

In each of the honors enriched courses in addition to the above mentioned course curricula, an honors student will meet with the instructor and sign a contract agreeing to carry out one or more of the enrichment experiences listed below.

The program coordinator will keep the contract on file.

- Research a topic for weekly discussions with the instructor
- An oral presentation on selected topics
- Prepare critiques on several research articles
- Extension of laboratory experiment(s) for further study
- A book reading
- A study on a special topic followed by an exam
- An internship
- Any other component decided by the instructor

V. Honors Thesis:

A student must complete an Honors Thesis during junior and senior years.

Time Guidelines:

1. First semester (junior year): A student should meet with faculty to discuss and determine a research project.
2. Second semester (junior year): A student must submit a research prospectus to the advisor and HID coordinator and must begin the research work.
3. First semester (senior year): A student must complete a research project and chose the committee members.
4. Second semester (senior year): A student must write thesis and publicly defend thesis at the Department seminar.

Thesis Advisor: _____

Topic: _____

Prospectus received: Yes; No. **Date:** _____