

Individualized Major in Health Sciences Assessment Plan

**1. Mission of the Major:** The individualized major in health sciences provides students with a foundation in the health sciences and prepares them for a variety of careers in health-related fields including medicine, veterinary science, physical therapy, and a number of the allied health professions (e.g., occupational therapy). Students learn to think critically when evaluating data and ethical issues related to the health sciences in society, and a commitment to meeting health challenges is instilled. Students learn to write and speak effectively and how to work collaboratively.

**2. Program Goals**

1. Provide an interdisciplinary undergraduate program that prepares students for a career within the health professions.
2. Provide guidance in health profession career exploration.
3. Train students to communicate in a clear, coherent manner in both written and oral form.
4. Provide students with the knowledge and skills to advance personal and societal health and wellness and instill a commitment to meet current and arising challenges in the healthcare field.
5. Educate students to think critically and quantitatively in evaluating data and to apply that skill to health issues and healthcare delivery in their local and global community, including ethical conflicts surrounding particular medical theories, technologies, applications, and policies.
6. Help students to understand the importance of multiple perspectives in the health sciences through collaborative learning where different opinions are valued and considered.

Alignment of HS goals with Wells Goals:

	Health Sciences Student Learning Goals					
Wells APG	1	2	3	4	5	6
Content 1				✓	✓	
Content 2				✓	✓	
Content 3	✓	✓	✓		✓	
Skills 1			✓	✓	✓	
Skills 2					✓	
Skills 3				✓	✓	
Skills 4				✓		✓
Skills 5		✓				
Skills 6					✓	✓

### 3. and 4. Learning Objectives and Outcomes

1. Provide an interdisciplinary undergraduate program that prepares students for a career within the health professions.

#### **1.1 Biological Sciences: Students will demonstrate that they understand basic biological principles and can apply them.**

**Learning Outcomes:** Mastery of these principles will be assessed in a variety of required courses that include Biol114L, Biol130L, Biol226L, Biol310L, Biol312L, Biol330L, Biol331L. Students' working knowledge of basic principles will be assessed through exams, projects, case studies, problem sets and laboratory reports. Students will use principles learned through courses to make informed conclusions in class discussion, lab activities, and exams.

#### **1.2 Psychological and Sociology: Students will demonstrate understanding of both individual and group differences in behavior and health.**

**Learning Outcomes:** Students will pass PSY 101 General Psychology and SOC 151 Principles of Sociology. They may also take electives relevant to their intended field within the Health Professions in these areas, such as PSY 342 Biological Bases of Behavior, SOC 200 Humans, Animals, and Interaction, or PSY 218 Adolescent Development, among others. Students will demonstrate multicultural competence through reflective essays on this subject in HS 100.

#### **1.3 Physical and Chemical Sciences- Students in this program will develop an understanding of principles underlying the Physical and Chemical Sciences.**

**Learning Outcomes:** Mastery of these principles will be assessed in a variety of required courses that include CHEM 107L General Chemistry, CHEM 108L Chemical Analysis, CHEM213L+ CHEM 214L Organic Chemistry I + II, CHEM323L Biochemistry, CHEM326 Biochemical Pathways, and PHYS111+ PHYS112 Physics I + II. The assessment will be based on exams, problem sets, lab activities, and projects.

#### **1.4 Sustainability and the Environment: Students understand the impact of environmental and sustainability practice on health.**

**Learning outcomes:** Students will demonstrate their understanding of environmental factors on health through reflective essays on this subject in HS 100.

2. Provide guidance in health profession career exploration.

#### **2.1 Students understand the duties of several different health care careers and why their intended career is the correct fit for them.**

**Learning Outcomes:** Assessment of this learning objective occurs through the completion of HS100 Introduction to Health Sciences. In the beginning of the course students complete a career plan that requires them to initially self-reflect on why they are interested in a specific health career. Throughout the semester students answer a series of 20 questions that builds on their career exploration and will be used to write their future personal statements. During HS100 students also interact with a variety of health care professional in class and during professional interviews to learn what it is really like in the careers that interest them. At the end of the course

students submit a final document that once again asks them to self-reflect on their health science career goal based on the information and interactions they experienced throughout the semester.

## **2.2 Students understand the roles of and communication between various health professions in healthcare systems.**

**Learning Outcomes:** Students will be able to describe how various health professionals work together to provide a system of healthcare to the individual and the community. This learning objective will also be assessed through the final HS100 assignment described in 2.1. In addition, students will increase their appreciation of communication and teamwork in the healthcare system through internships and involvement with the Rural Health Program.

## **2.3 Students understand the admissions requirements and process for their health profession of choice.**

**Learning Outcomes:** Students develop a career plan to for their intended health profession(s). The career plan includes course prerequisites, entrance GPA, entrance exam, admissions process timeline, and any additional requirements, such as shadowing or patient contact hours.

## **2.4 Students gain hands-on experience in a healthcare setting relevant to their intended career.**

**Learning Outcomes:** Students will complete HS 290/390 Internships in the Health Sciences. They are evaluated by a reflection paper and poster presentation.

3. Train students to communicate in a clear, coherent manner in both written and oral form.

### **3.1: Students demonstrate effective written communication.**

**Learning Outcomes:** Students will be assessed by their ability to write clear and coherent essays (in a variety of courses) to convey their reflections, ideas, and hypotheses. Students will be able to appropriately cite sources, in the appropriate style to the field, in papers and posters (assigned in a variety of courses).

### **3.2: Students demonstrate effective oral communication.**

**Learning Outcomes:** Students can orally present their work and ideas to their peers, the Wells community, and the outside community (variety of courses, including internships and the rural health immersion program). Students can both conduct and take professional interviews (HS100).

4. Provide students with the knowledge and skills to advance personal and societal health and wellness and instill a commitment to meet current and arising challenges in the healthcare field.

### **4.1 Students understand the role of public health officials.**

**Learning outcomes:** Students discuss the role of public health in healthcare challenges through a case study assignment in HS 100.

#### **4.2 Students are aware of current and future healthcare challenges.**

**Learning outcomes:** Students read case studies and discuss healthcare topics in small groups or as a whole class (HS100; Biol3019L, Biol226L). Students present on healthcare topics as individuals or in groups. Student write senior theses (HS401) on healthcare topics.

5. Educate students to think critically and quantitatively in evaluating data and to apply that skill to health issues and healthcare delivery in their local and global community, including ethical conflicts surrounding particular medical theories, technologies, or applications.

#### **5.1 Students will develop an understanding for the ethical issues that surround particular medical theories, technologies and applications.**

**Learning Outcome:** In HS100 students complete two assignments that specifically focus on ethical issues in the healthcare field. The first assignment involves reading two separate novels, submitting two separate reflective pieces, and participating in two in-class discussions. In addition, medical ethical issues are addressed throughout the other required courses in this program. For example, students in CHEM326 discuss the of using DNP as a weight loss drug and the ethics behind drug regulation. In both Biol226L and Biol312L students discuss applications of new genetic technologies to personal and societal health and the ethical issues that arise from using these new technologies.

#### **5.2 Students will learn new technologies and how they can be applied.**

**Learning Outcome:** Students work with new technologies in lab or class and discuss their usefulness and application. Students demonstrate knowledge of the technology, ethical implications, and application through lab reports or research papers. For example, in CHEM323L students apply the Biochemical and Physical principles they have mastered to understand how a glucometer is designed and is used to measure glucose concentrations in fake blood samples. In this activity they are asked to explain how a glucometer works to a mock patient. Students then complete a lab exercise where they use glucometers and fake blood samples to diagnose a patient as diabetic or glucose intolerant. Outside of required coursework students are exposed to a variety of medical technologies during their internships and participation in the Rural Health Immersion Program. In Biol312L students will learn to use CRISPR in the lab, a genome editing technology that allows the manipulation of any part of the genome. We will discuss the ethical implications that come with editing the human genome.

#### **5.3 Students will develop the ability efficiently analyze and think critically about medically relevant problems.**

**Learning Outcome:** Assessment of this outcome will be carried out through exams, problem sets, case studies and labs developed for the required courses in the program. One specific example included a case study presented in HS100 that introduced students to the field of Epidemiology. While working though this activity, students were exposed to the basics of study design and using data from a human population to make a conclusion about the toxicity of a contaminated body of water.

6. Help students to understand the importance of multiple perspectives in the health sciences through collaborative learning where different opinions are valued and considered.

**6.1 Individual Behavioral Competence: Students will demonstrate understanding of factors influencing individual behavioral differences and their impact on health.**

**Learning outcomes:** Students will pass PSY 101 General Psychology. They may also take electives relevant to their intended field within the Health Professions in these areas, such as PSY 343 Neuropsychology, PSY 206 Health Psychology, and/or PSY 227 Abnormal Psychology, among others.

**6.2 Cultural Competence: Students will demonstrate cultural competence by valuing and understanding cultural differences and multicultural perspectives.**

**Learning outcomes:** Students will demonstrate multicultural competence through reflective essays on this subject in HS 100.

**6.3 Students will demonstrate their ability to work collaboratively.**

**Learning outcomes:** Students will work collaboratively on a group project in multiple courses: HS 401, OSC Rural Health Immersion, Biol226, Biol309, Biol310, and Biol312.

**4. Learning Outcomes-** see above.

**5. Means of Assessment of Outcomes**

Student work will be assessed by the faculty member(s) teaching the targeted courses. Each faculty member will evaluate if the students learned what was expected, based on each assignment (paper, presentation, group work, etc). Percentages of how well the student answered/completed the activity will be calculated, and overall student proficiency in that objective will be considered met if 70% of the students demonstrated a passing grade on the assessed activity. The table of assessed course outcomes is included in the HS 2015-2016 Annual Assessment Report.

**6. How Assessment Data will be utilized.**

Each year we will target HS100, HS401, and additional courses (selected by that year's course offerings) to determine how well our students are achieving our major goals and objectives. Course selection will include courses from the various HS tracks. This will allow us to determine if this course is meeting the goals of the HS major and we can adjust course content or inclusion in the major accordingly. See the Annual Assessment Report for the 2016-2017 academic year plan.