# Biomedical Sciences

## Program: Biomedical Sciences

**Degree:** B.S.  
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## Program Learning Outcomes

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| Students will be able to:                                                               | 1. Integrate and apply physiological, anatomical, microbiological, biochemical and pathological concepts and information to explain how commonly used therapeutic agents alter pathophysiology and contribute to the treatment of human disease.  
2. Integrate and apply physiological, biochemical, and pathological concepts and information to explain the cellular and molecular basis of selected diseases. | Faculty in the senior courses BISC 120 and BISC 160 will generate 5-10 questions each that require integration and mastery of basic biomedical information.  
The exit and alumni surveys will also be used to collect additional data. | The analysis of the information will be a joint effort. Individual faculty members will collect the information from the exams and pass this information to the program coordinator. The program coordinator will also have information from the alumni surveys. The program coordinator will compile the information and direct a small assessment committee of three faculty members and report to the department chair. Individual faculty members and the assessment committee will decide on measures that need to be improved and how. The entire faculty will review whether there are necessary changes to be made to the curriculum. |
| 1. Explain fundamental concepts in the major areas of biomedical sciences (anatomy, physiology, biochemistry, microbiology, pathology, pharmacology, and molecular pathology). |                                                                                       |                                                                                                                                              |                                                                                                                                                                                                                  |
| 2. Successfully compete for enrollment in graduate and professional schools and/or careers in the health care field. |  Be accepted into graduate or professional schools or a health care career within two years of graduation. | Questions on the exit survey and one and five year alumni survey will address these questions.                                               | The program coordinator will compile the information and direct a small assessment committee of three faculty members and report to the department chair. Individual faculty members and the assessment committee will decide on measures that need to be improved and how. The entire faculty will review whether there are necessary changes to be made to the curriculum.  |


| 3. Demonstrate scientific literacy and apply it to contemporary health care issues | a. Explain the essential requirements for establishing the validity of biomedical research findings.  
b. Describe the impact of hereditary diseases, cancer, mental disorders and infectious diseases on society both in the US and in various parts of the world. | a. Pharmacology will incorporate exam or quiz questions in which the students will be required to review evidence presented for and against real or hypothetical health care issues (e.g., novel or unconventional uses of certain drugs or therapies, roles of newly-discovered hormones), and draw conclusions about their scientific validity.  
Biochemistry will discuss the methods involved in stem cell research and cloning and ask students exam questions pertaining to its possible medical uses.  
b. Microbiology and Molecular pathology will incorporate exam or quiz questions which will require the students to describe the impact of disease on US or global society. | The analysis of the information will be a joint effort. Individual faculty members will collect the information from the exams and pass this information to the program coordinator. The program coordinator will also have information from the alumni surveys. The program coordinator will compile the information and direct a small assessment committee of three faculty members and report to the department chair. Individual faculty members and the assessment committee will decide on measures that need to be improved and how. The entire faculty will review whether there are necessary changes to be made to the curriculum. Assessment will be a three year cycle, as in goal #1 so that a cohort of students can be followed. |
| 4. Demonstrate an understanding of medical ethics and a commitment to service to others. | Participate in 1) extra-curricular activity focused on service, biomedical sciences student activities, or professional activities 2) participate in biomedical research, and/or 3) participate in coursework related to social justice or medical ethics. | Graduation exit survey will provide information regarding the percent of students who participated in service, research, and coursework related to social justice and medical ethics. It will also provide information regarding the understanding of ethical principals related to their profession.  
Our own records of student research, service activities, and enrollment in social justice and medical ethics courses will also be used. | The program coordinator will compile the results of the exit survey. |