• INTERDISCIPLINARY NATURAL SCIENCES (INS)

The Interdisciplinary Natural Science degree serves the academic and career goals of undergraduate students who seek a broad education in the Natural Sciences (Biology, Chemistry, Physics, Mathematics, Geology).

For information on teacher certification in science or mathematics, prospective teachers should consult the section entitled Teacher Education Programs and also consult the College of Education section of the catalog.

Recommended Prerequisites (State Mandated Common Prerequisites)

Students wishing to transfer to USF should complete the A.A. degree at the community college. Some courses required for the major may also meet General Education Requirements thereby transferring maximum hours to the university. If students transfer with fewer than 60 semester hours of acceptable credit, the students must meet the university’s entering freshman requirements including ACT or SAT test scores, GPA, and course requirements.

There are no State Mandated Common Prerequisites for this degree program.

Students are encouraged to complete as many of the following courses as possible, during the program of study at the community college, and when feasible in General Education/Gordon Rule courses. Unless stated otherwise, a grade of “C” is the minimum acceptable grade.

Biology I and Biology II
(BSC 2010, 2010L, BSC 2011, 2011L) 8
Calculus
(MAC 2241, MAC 2242 or MAC 2311, MAC 2312) 6-8
General Chemistry
(CHM 2041, CHM 2045L, CHM 2046, CHM 2046L) 8
Organic Chemistry
(CHM2210, CHM2210L, CHM2211, CHM2211L) 8
General Physics
(PHY 2053, PHY 2053L, PHY 2054, PHY 2054L or PHY 2048, PHY 2048L, PHY 2049, PHY 2049L) 8
Introduction to Physical Geology and History of the Earth and Life
(GLY 2010, GLY 2015L, GLY 2100, GLY 2100L) 8

Requirements for the Major in Interdisciplinary Natural Sciences

Coursework required for Interdisciplinary Natural Science majors:

**TIER 1**

Two introductory courses in each of 5 natural sciences areas (Math, Physics, Chemistry, Biology, Geology) totaling 40 hours:

Calculus and II
(MAC 2241, 2242 or MAC 2311, 2312 or MAC 2281, 2282)

STA 2023 could be substituted for Calculus II

Biology I and II
(BSC 2010, 2010L and BSC 2011, 2011L)

General Chemistry I and II
(CHM 2045, 2045L and CHM 2046, 2046L)

Geology I and II
(GLY 2010, 2015L and GLY 2100, 2100L)

Physics I and II
(PHY 2053, 2053L, 2054, 2054L, or PHY 2048, 2048L, 2049, 2049L)

**TIER 2**

At least 8 hours of structured, upper division (3000 level or higher) courses in three of the five natural sciences areas, totaling 24 hours. All Tier 2 courses in the sciences will be selected by the individual student, but must be chosen from the list of courses approved for department Major credit.

Residency

At least 12 of the 24 hours at Tier 2 must be taken at USF.

Requirements for the Major in Biomedical Sciences (B.S.)

Biomedical Sciences is designed to fulfill the major requirements for professional schools in the Health Sciences (e.g. Medicine, Veterinary Medicine, Dentistry). Students contemplating graduate study should pursue a major in the discipline of their interest, such as Biology, Chemistry, or Microbiology. Students must attain a C- or higher in all required courses for the Major.

Required Natural Science Courses:

**Biology:**

BSC 2010 Biology I - Cellular Processes (3)

BSC 2010L Biology I Lab (1)

BSC 2011 Biology I - Diversity (3)

BSC 2011L Biology II Lab (1)

MCB 3020C General Microbiology (4)

**Chemistry:**

CHM 2045 General Chemistry I (3)

CHM 2045L General Chemistry I Lab (1)

CHM 2046 General Chemistry II (3)

CHM 2046L General Chemistry II Lab (1)

CHM 2210 Organic Chemistry I (3)

CHM 2210L Organic Chemistry I Lab (1)

CHM 2211 Organic Chemistry II (3)

CHM 2211L Organic Chemistry II Lab (1)

BCH 3023 Introductory Biochemistry (3)

**Mathematics:**

MAC 2241 Life Sciences Calculus I (4)

MAC 2242 Life Sciences Calculus II (4)

STA 2023 Introductory Statistics (4)

**Physics:**

PHY 2053 General Physics I (3)

PHY 2053L General Physics I Lab (1)

PHY 2054 General Physics II (3)

PHY 2054L General Physics II Lab (1)

*Students may substitute Human Anatomy or Physiology I and II (BSC 2093 & 2094) for Physics I & II

Required Biology Electives:

Minimum of 6 credit hours in TWO of the following courses. One course must be with lab. Select from the following courses, noting prerequisites where applicable:

MCB 4115 Determinative Bacteriology (5)

MCB 4404 Microbial Physiology and Genetics (4)

MCB 4404L Microbial Physiology and Genetics Lab (1)

MCB 5815 Medical Mycology (3)

MCB 4502 Virology (3)

PCB 3023 Cell Biology (3)

PCB 3023L Cell Biology Lab (1)

PCB 3063 General Genetics (3)

PCB 3063L Genetics Lab (1)

PCB 4064C Experimental Genetics (3)

PCB 5235 Principles of Immunology (3)

or

PCH 6311 Tropical Health Immunology (3)

ZOO 4753C Histology (4)
**Required Natural Science Electives:**

Minimum of 7 credit hours in Biology, Chemistry, or Physics. Select from the following list, noting prerequisites where applicable, and not duplicating courses used to meet the above requirements:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BCH 3023L</td>
<td>Biochemistry Lab</td>
<td>1</td>
</tr>
<tr>
<td>BCH 4034</td>
<td>Advanced Biochemistry</td>
<td>3</td>
</tr>
<tr>
<td>CMH 3120C</td>
<td>Elem. Analytical Chemistry</td>
<td>4</td>
</tr>
<tr>
<td>CHS 4300</td>
<td>Clinical Chemistry</td>
<td>3</td>
</tr>
<tr>
<td>CHS 4301L</td>
<td>Clinical Chemistry Lab</td>
<td>2</td>
</tr>
<tr>
<td>HSA 4120</td>
<td>Introduction to Public Health</td>
<td>3</td>
</tr>
<tr>
<td>HSC 4554</td>
<td>Survey of Human Disease</td>
<td>3</td>
</tr>
<tr>
<td>MCB 4115C</td>
<td>Determinative Bacteriology</td>
<td>5</td>
</tr>
<tr>
<td>MCB 4404</td>
<td>Microbial Phys/Genetics</td>
<td>4</td>
</tr>
<tr>
<td>MCB 4404L</td>
<td>Microbial Phys/Genetics Lab</td>
<td>1</td>
</tr>
<tr>
<td>MCB 4502</td>
<td>Virology</td>
<td>3</td>
</tr>
<tr>
<td>MCB 5206</td>
<td>Pub. Health/Pathogenic Micro</td>
<td>3</td>
</tr>
<tr>
<td>MCB 5815</td>
<td>Medical Mycology</td>
<td>3</td>
</tr>
<tr>
<td>PCB 3023</td>
<td>Cell Biology</td>
<td>3</td>
</tr>
<tr>
<td>PCB 3023L</td>
<td>Cell Biology Lab</td>
<td>1</td>
</tr>
<tr>
<td>PCB 3063</td>
<td>General Genetics</td>
<td>3</td>
</tr>
<tr>
<td>PCB 3063L</td>
<td>General Genetics Lab</td>
<td>1</td>
</tr>
<tr>
<td>PCB 4064</td>
<td>Experimental Genetics</td>
<td>3</td>
</tr>
<tr>
<td>PCB 4723</td>
<td>Animal Physiology</td>
<td>3</td>
</tr>
<tr>
<td>PCB 4723L</td>
<td>Animal Physiology Lab</td>
<td>1</td>
</tr>
<tr>
<td>PHZ 4731</td>
<td>ST: Applications of Physics to</td>
<td>4</td>
</tr>
<tr>
<td>PHZ 4732</td>
<td>ST: Applications of Physics to</td>
<td>4</td>
</tr>
<tr>
<td>ZOO 4753C</td>
<td>Histology</td>
<td>4</td>
</tr>
</tbody>
</table>

At least 12 hours of upper division required science courses must be completed as USF.