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| S:\Communications\Logos and photos\SDBORLogos\final_sdbor_webreadyBW_trans.gif | **SOUTH DAKOTA BOARD OF REGENTS**  ACADEMIC AFFAIRS FORMS |
| New Specialization |
|  |  |

|  |  |
| --- | --- |
| **UNIVERSITY:** | DSU |
| **TITLE OF PROPOSED SPECIALIZATION:** | **Integrative Biology** |
| **NAME OF DEGREE PROGRAM IN WHICH SPECIALIZATION IS OFFERED:** | **B.S. in Biology** |
| **INTENDED DATE OF IMPLEMENTATION:** | **5/10/2021** |
| **PROPOSED CIP CODE:** | **26.9999** |
| **UNIVERSITY DEPARTMENT:** | **College of Arts and Science** |
| **BANNER DEPARTMENT CODE:** | **DSCI** |
| **UNIVERSITY DIVISION:** | **DAS** |
| **BANNER DIVISION CODE:** | **DSCI** |

**Please check this box to confirm that:**

* The individual preparing this request has read [AAC Guideline 2.6](https://www.sdbor.edu/administrative-offices/academics/academic-affairs-guidelines/Documents/2_Guidelines/2_6_Guideline.pdf), which pertains to new specialization requests, and that this request meets the requirements outlined in the guidelines.
* This request will not be posted to the university website for review of the Academic Affairs Committee until it is approved by the Executive Director and Chief Academic Officer.

**University Approval**

*To the Board of Regents and the Executive Director: I certify that I have read this proposal, that I believe it to be accurate, and that it has been evaluated and approved as provided by university policy.*

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|  |  | 1/27/2021 |
| Institutional Approval Signature  *President or Chief Academic Officer of the University* |  | Date |

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1. **Level of the Specialization (*place an “X” in the appropriate box*):**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Baccalaureate |  | Master’s |  | Doctoral |  |

1. **What is the nature/purpose of the proposed specialization?**

The university is proposing to combine the Bachelor of Science in Biology and the Bachelor of Science in Biology Education majors, take the existing courses and package them into a 21-hour core and two specializations (Integrative Biology or English Education). The goal of the specialization in Integrative Biology is to prepare graduates to become employees for the science-based industries, medial fields, and agencies that use modern technology. This program provides an excellent background in computer science/information systems technology as well as a solid foundation in biology, supporting sciences and mathematics. This program also provides an excellent foundation for persons wishing to pursue a specialized professional career such as medicine, dentistry, etc. or to obtain advanced education in the health fields or biological sciences.

1. **Provide a justification for the specialization, including the potential benefits to students and potential workforce demand for those who graduate with the credential.**[[1]](#footnote-1)

This specialization is the current the Bachelor of Science in Biology major offered by Dakota State University.  Instead of having two different undergraduate Biology programs, DSU is proposing to combine the two programs under one umbrella.   Enrollment numbers for Biology range from 25-30 students over the last 5 years.  South Dakota Occupational Employment Projections for 2019-2021 project a 3.6% job growth in the Biological Technician; 3.6% job growth in Environmental Sciences and 6.8% growth in the Medical Sciences.1

1 <https://dlr.sd.gov/lmic/menu_projections.aspx>

1. **List the proposed curriculum for the specialization (including the requirements for completing the major – *highlight courses in the specialization*):**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Prefix** | **Number** | **Course Title**  *(add or delete rows as needed)* | | **Credit Hours** | **New**  **(yes, no)** |
| **Biology Component** | | | | **19** |  |
| BIOL | 343 | Cell and Molecular Biology | | 4 | no |
| BIOL | 343L | Cell and Molecular Biology Lab | | 0 | no |
| Choose 15 credits from the following: | | | | 15 |  |
| BIOL | 325 | Physiology | | 4 | no |
| BIOL | 325L | Physiology Lab | | 0 | no |
| BIOL | 365 | Vertebrate Zoology | | 4 | no |
| BIOL | 365L | Vertebrate Zoology | | 0 | no |
| BIOL | 410 | Conservation Biology | | 3 | no |
| BIOL | 422 | Immunology | | 3-4 | no |
| BIOL | 442L | Immunology Lab | | 0-1 | no |
| BIOL | 450 | Aquatic Biology | | 4 | no |
| BIOL | 450L | Aquatic Biology Lab | | 0 | no |
| BIOL | 492 | Topics\* May be repeated | | 1-4 | no |
|  |  |  | |  |  |
| **Math and Science Support Component** | | | | **22** |  |
| Note: Students planning to pursue a career in medicine or health professions are encouraged to take CHEM 326, CHEM 460, CHEM 492, MATH 123 or MATH 201, PHYS 111 or 211 and PHYS 113 or 213 | | | |  |  |
| CHEM | 112 | General Chemistry | | 4 | no |
| CHEM | 112L | General Chemistry Lab | | 0 | no |
| CHEM | 114 | General Chemistry II | | 4 | no |
| CHEM | 114L | General Chemistry II Lab | | 0 | no |
| MATH | 281 | Introduction to Statistics | | 3 | no |
| Choose 11 credits from the following: | | | | 11 |  |
| CHEM | 326 | Organic Chemistry I | | 3 | no |
| CHEM | 326L | Organic Chemistry I Lab | | 1 | no |
| CHEM | 328 | Organic Chemistry II | | 3 | no |
| CHEM | 328L | Organic Chemistry II Lab | | 1 | no |
| CHEM | 332 | Analytical Chemistry | | 3 | no |
| CHEM | 332L | Analytical Chemistry Lab | | 1 | no |
| CHEM | 460 | Biochemistry | | 3 | no |
| CHEM | 492 | Topics\* (repeatable) | | 1-4 | no |
| EXS | 350 | Exercise Physiology | | 3 | no |
| EXS | 350L | Exercise Physiology Lab | | 1 | no |
| EXS | 353 | Kinesiology | | 2-3 | no |
| HIM | 130 | Basic Medical Terminology | | 2 | no |
| HLTH | 422 | Nutrition | | 3 | no |
| MATH | 123 | Calculus I | | 4 | no |
| MATH | 125 | Calculus II | | 4 | no |
| MATH | 418 | Mathematical Modeling | | 3 | no |
| PHYS | 111 | Intro to Physics I | | 4 | no |
| PHYS | 111L | Intro to Physics I Lab | | 0 | no |
| PHYS | 113 | Intro to Physics II | | 4 | no |
| PHYS | 113L | Intro to Physics II Lab | | 0 | no |
| PHYS | 211 | University Physics I | | 4 | no |
| PHYS | 211L | University Physics I Lab | | 0 | no |
| PHYS | 213 | University Physics II | | 4 | no |
| PHYS | 213L | University Physics II Lab | | 0 | no |
|  |  |  | |  |  |
| **Science Technology Courses** | | | | **15** |  |
| CSC | 105 | Introduction to Computers | | 3 | no |
| CIS  CIS  CSC | 123  130  150 | Problem Solving & Programming OR  Visual Basic Programming OR  Computer Science OR | | 3 | no |
| ENGL | 379 | Technical Communication | | 3 | no |
| BIOL | 303 | Introduction to Biological Instrumentation | | 3 | no |
| BIOL | 335 | Introduction to Bioinformatics | | 3 | no |
|  |  |  | |  |  |
| **Social Science Course** – Select a course from Social Science listing with prefix ANTH, HIST or SOC that is not already used to satisfy general education requirements. | | | | **3** | no |
|  |  |  | |  |  |
| Total number of hours required for completion of specialization | | |  | 59 |
| Total number of hours required for completion of major | | |  | 80 |
| Total number of hours required for completion of degree | | |  | 120 |

1. **Delivery Location[[2]](#footnote-2)**

**A. Complete the following charts to indicate if the university seeks authorization to deliver the entire program on campus, at any off-campus location (e.g., UC Sioux Falls, Capital University Center, Black Hills State University-Rapid City, etc.) or deliver the entire program through distance technology (e.g., as an on-line program)?**

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| --- | --- | --- |
|  | **Yes/No** | ***Intended Start Date*** |
| **On campus** | Yes | **Fall 2021** |

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Yes/No** | ***If Yes, list location(s)*** | ***Intended Start Date*** |
| **Off campus** | No |  | Choose an item.Choose an item. |

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| --- | --- | --- | --- |
|  | **Yes/No** | ***If Yes, identify delivery methods[[3]](#footnote-3)*** | ***Intended Start Date*** |
| **Distance Delivery (online/other distance delivery methods)** | No |  |  |

**B. Complete the following chart to indicate if the university seeks authorization to deliver more than 50% but less than 100% of the certificate through distance learning (e.g., as an on-line program)? [[4]](#footnote-4)**

|  |  |  |  |
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|  | **Yes/No** | ***If Yes, identify delivery methods*** | ***Intended Start Date*** |
| **Distance Delivery (online/other distance delivery methods)** | No |  | Choose an item.Choose an item. |

1. For workforce related information, please provide data and examples; data sources may include but are not limited to the South Dakota Department of Labor, the US Bureau of Labor Statistics, Regental system dashboards, etc. [↑](#footnote-ref-1)
2. The Higher Learning Commission (HLC) and Board of Regents policy requires approval for a university to offer programs off-campus and through distance delivery. [↑](#footnote-ref-2)
3. Delivery methods are defined in [AAC Guideline 5.5](https://www.sdbor.edu/administrative-offices/academics/academic-affairs-guidelines/Documents/5_Guidelines/5_5_Guideline.pdf). [↑](#footnote-ref-3)
4. This question responds to HLC definitions for distance delivery. [↑](#footnote-ref-4)