# http://www.ric.edu/webcommunications/images/SealWithText_Small_Black.pngUNDERGRADUATE CURRICULUM COMMITTEE (UCC)PROPOSAL FORM

## Cover page scroll over blue text to see further important [instructions](#instructions): [if not working select “COMMents on rollover” in your Word preferences under view] **please read these.**

**N.B. ALL numbered categories in section (A) must be completed. Please do not use highlight to select choices within a category but simply delete the options that do not apply to your proposal (e.g. in A.2 if this is a course revision proposal, just delete the creation and deletion options and the various program ones, so it reads “course revision”) Do not delete any of the numbered categories—if they do not apply leave them blank. If there are no resources impacted please put “none” in each A. 7 category.**

|  |  |  |
| --- | --- | --- |
| A.1. [Course or program](#Proposal) | **Biotechnology, BS** |  |
| [Replacing](#Ifapplicable)  |  |
| A. 1b. Academic unit | **Faculty of Arts and Sciences** |  |
| A.2. [Proposal type](#type) | **Program:** [**creation**](#creation) |  |
| A.3. [Originator](#Originator) | **Dana Kolibachuk** | [Home department](#home_dept) | **Biology** |
| A.4. [Context and Rationale](#Rationale) Note: Must include additional information in smart tip for all [new programs](#type) | **Biotechnology is an active growth area with career options emerging in a variety of sectors such as the pharmaceutical industry, healthcare, manufacturing, agriculture, and food science. The State of Rhode Island plans to invest significant resources ($45 million in fiscal year 2024) to develop a biotechnology sector in the Providence area. Rhode Island College is ideally situated to this site and has been tasked to develop programs that would produce a technologically skilled workforce. The College has been awarded $0.7 million this fiscal year to develop the program and a new investment of $0.5 million is proposed for FY 24. Graduates of the Biotechnology BS program at RIC will be well-positioned for jobs within the state.****The Biotechnology BS is a multidisciplinary major that is based upon similar programs offered at five of our peer institutions. In many ways, the Biotechnology BS resembles the Biology BS for the first two years and the total number of credits is about the same for the two programs. This overlap will allow for students to easily switch majors between Biology and Biotechnology (and vice versa). For the most part, this major includes courses that currently exist in the RIC catalog as well as the creation of four biotechnology (BIOT) courses. The program is designed to reflect the interdisciplinary nature of the biotechnology industry and provides a strong foundation in cellular and molecular biology and includes cognates in chemistry, math, physics and computer science. There is some flexibility in the cognates and some courses are not included in the Biology BS. Two of these biotechnology courses (BIOT 270W and BIOT 370) have a traditional lecture/laboratory format where students develop a working knowledge and technical skills required in two fundamental areas of biotechnology: drug discovery and development, and protein expression systems. The remaining two include an internship experience (BIOT 406-410) and an internship seminar (BIOT 465W) where students will discuss their internship and develop additional career skills. The prerequisites for the internship experience (BIOT 406-410) include a minimum grade of B- in BIOT 270W and BIOT 370 and three positive lab competency evaluations from RIC instructors. These internship prerequisites serve both as admission and retention requirements for the Biotechnology program. Students who cannot meet these prerequisites can easily switch to a Biology major. Two of these courses (BIOT 270W and 465W) will include the features of Writing in the Curriculum courses, modeled after those in the Biology BS program, at the 200- and 400- levels, but specific to forms of writing students will likely encounter both in the biotechnology workplace and as they seek to enter biotechnology careers.** **One goal of this program is for students to understand the societal and environmental impacts of biotechnology. It is for this reason that a Technology Liberal Arts Elective was included where students select one technology-themed course offered by departments that do not offer traditional STEM classes. By allowing students to choose from a list of courses for both the Technology Liberal Arts Elective and the Science Electives, this program provides more options and flexibility for students so that they can progress through the program in a timely manner. In addition, these lists can be periodically updated to include new courses.****The total credits for the program will be 69-76 depending on choices, but up to 16 credits may be able to double-count as Gen Eds.** |
| A.5. [Student impact](#student_impact)Must include to explain why this change is being made? | **Students will have a new degree option that is specialized in biotechnology and will prepare them for employment in this field. It is expected that this program will draw in new students to Rhode Island College.**  |
| A.6. [Impact on other programs](#impact)  | **It is anticipated that additional seats will be needed in Biology courses as well as in cognate courses in Physical Sciences and Math, and electives in Anthropology, Computer Science, History, and Philosophy.** |
| A.7. [Resource impact](#Resource) | [*Faculty PT & FT*](#faculty):  | **One new full time faculty member is being funded by the state of RI. A search commences Spring 2023.** |
| [*Library*:](#library) | **None** |
| [*Technology*](#technology) | **None** |
| [*Facilities*](#facilities): | **Space in Fogarty Life Science is being remodeled for Biotechnology laboratory courses and is funded by the state of RI.** |
| A.8. [Semester effective](#Semester_effective) | **Fall 2023** | A.9. [Rationale if sooner than next Fall](#Semester_effective) | **n/a** |
| A.10. INSTRUCTIONS FOR CATALOG COPY: Use the Word copy versions of the catalog sections found on the UCC Forms and Information page. Cut and paste into a single file **ALL the relevant pages from the college catalog that need to be changed.** Use tracked changes feature to show how the catalog will be revised as you type in the revisions. If totally new copy, indicate where it should go in the catalog. If making related proposals a single catalog copy that includes all changes is preferred. Send catalog copy as a separate single Word file along with this form. |
| A.11. List here (with the relevant urls), any RIC website pages that will need to be updated (to which your department does not have access) if this proposal is approved, with an explanation as to what needs to be revised:**Biotechnology B.S. page will need to be created.****Biotechnology B.S. will need to be added/linked to FAS Undergraduate Programs**<https://www.ric.edu/department-directory/faculty-arts-and-sciences/fas-undergraduate-programs>**Biotechnology B.S. will need to be added/linked to Department of Biology Undergraduate Programs**<https://www.ric.edu/department-directory/department-biology/department-biology-undergraduate-programs> |
| A. 12 **Check to see if your proposal will impact any of our** [**transfer** **agreements,**](transfer%20agreements) **and if it does explain in what way. Please indicate clearly what will need to be updated.****None of the cognate courses will be affected, but newly developed BIOT courses may need to be articulated with other state institutions.** |
| A. 13 Check the section that lists “Possible NECHE considerations” on the UCC Forms and Information page and if any apply, indicate what that might be here and contact Institutional Research for further guidance. **n/a** |

### C. [Program Proposals](#program_proposals) **Complete only what is relevant to your proposal. Delete section C if not needed. PLease add in the 2020 CIP number for MAJOR revisions or new programs in C. 2; these can be found at** [**https://nces.ed.gov/ipeds/cipcode/browse.aspx?y=56**](https://nces.ed.gov/ipeds/cipcode/browse.aspx?y=56) **consult with Institutional research to be sure you select the correct one.**

|  | [Old (for revisions only)](#old_program) | New/revised |
| --- | --- | --- |
| C.1. [Enrollments](#enrollments) Must be completed. |  | **24/year** |
| C. 2. [2020 CIP number](#CIPnumber" \o "THESE CAN BE FOUND AT HTTPS://NCES.ED.GOV/IPEDS/CIPCODE/BROWSE.ASPX?Y=56 CONSULT WITH INSTITUTIONAL RESEARCH TO BE SURE YOU SELECT THE CORRECT ONE.) |  | **26.1201** |
| C.3. [Admission requirements](#admissions) |  | **n/a** |
| C.4. [Retention requirements](#retention) |  | **n/a** |
| C.5. [Course requirements](#course_reqs) for each program option. Show the course requirements for the whole program here. |  | **Major Requirements:****BIOL 111 (4)****BIOL 112 (4)****BIOL 314 (4)****BIOL 320 (4)****BIOT 270W (4) - proposed****BIOT 370 (4) - proposed****BIOT 406-410 (6-10) - proposed****BIOT 465W (2) - proposed****Cognates:****CHEM 103 (4)****CHEM 104 (4)****CHEM 205W (4)****CHEM 206W (4)****MATH 209 or 212 (4)****Choice: MATH 240 or BIOL 240 (4)****Choice: CSCI 157 or PHYS 110 (4)****Science Electives - Choose 2****BIOL 348 (4)****BIOL 429 (4)****BIOL 431 (3)****BIOL 330 (4)****CHEM 404 or 416 (4)****CHEM 422 (3)****CHEM 425 (4)****CSCI 209 (4)****MATH 245 (4)****PHYS 309 (4)****Technology Liberal Arts Elective - Choose 1****ANTH 334 (4)****HIST 108 (4)****PHIL 207 (3)****PHIL 320 (3)** |
| C.6. [Credit count](#credit_count) for each program option |  | **69-76**  |
| C.7. Program Accreditation (if relevant) |  | **n/a** |
| C.8 Is it possible that the program will be more than 50% online (includes hybrid)?\* |  | **NO** |
| C.9 Will any classes be offered at sites other than RIC campus or the RI Nursing Ed. Center?\* |  | **NO** |
| C. 10. Do these revisions reflect more than 25% change to the [program?\*](file:///Users/sabbotson/Documents/Curriculum/Program%20goals)  |  | **n/a** |
| C.11. [Program goals](file:///Users/sabbotson/Documents/Curriculum/Program%20goals)Needed for all new programs |  | **The Biotechnology Bachelor of Science program at Rhode Island College is a multidisciplinary major designed to foster the development of technical and laboratory skills needed for entry level positions in the biotechnology industry. Graduates of this program will be able to understand and apply basic science, demonstrate technical skills, demonstrate effective oral and written communication, understand societal and environmental impacts of biotechnology, and comprehend practical considerations of biotechnology in the private sector and government.** |
| C.12. Other changes if any |  | **n/a** |

\* If answered YES to either of these questions will need to inform Institutional Research and get their acknowledgement on the signature page.

## D. Signatures

* **Changes that affect General Education in any way MUST be approved by ALL Deans and COGE Chair**.
* Changes that directly impact more than one department/program MUST have the signatures of all relevant department chairs, program directors, and their relevant dean (e.g. when creating/revising a program using courses from other departments/programs). Check UCC manual 4.2 for further guidelines on whether the signatures need to be approval or acknowledgement.
* Proposals that do not have appropriate approval signatures will not be considered.
* Type in name of person signing and their position/affiliation.
* Send electronic files of this proposal and accompanying catalog copy to curriculum@ric.edu to the current Chair of UCC. Check UCC website for due dates. Do NOT convert to a .pdf.

##### D.1. Approvals: required from programs/departments/deans who originate the proposal. THESE may include multiple departments, e.g., for joint/interdisciplinary proposals.

| Name | Position/affiliation | [Signature](#_Signature" \o "Insert electronic signature, if available, in this column) | Date |
| --- | --- | --- | --- |
| Earl Simson | Dean of FAS | \*approved by email | 2/23/2023 |
| Dana Kolibachuk | Chair of Biology | \*approved by email | 2/24/2023 |
| Rebecca Sparks | Chair of Mathematics | \*approved by email | 2/27/2023 |
| Suzanne Mello Stark | Chair of Computer Science and Information Systems | \*approved by email | 2/27/2023 |
| Peter Little | Chair of Anthropology | \*approved by email | 2/24/2023 |
| Elisa Miller | Chair of History | \*approved by email | 2/24/2023 |
| Glenn Rawson | Chair of Philosophy | \*approved by email | 2/24/2023 |
| Andrea Del Vecchio | Chair of Physical Sciences | \*approved by email | 3/3/2023 |

#####  D.2. [Acknowledgements](#acknowledge): REQUIRED from OTHER PROGRAMS/DEPARTMENTS (and their relevant deans if not already included above) that are IMPACTED BY THE PROPOSAL. SIGNATURE DOES NOT INDICATE APPROVAL, ONLY AWARENESS THAT THE PROPOSAL IS BEING SUBMITTED. CONCERNS SHOULD BE BROUGHT TO THE UCC COMMITTEE MEETING FOR DISCUSSION; all faculty are welcome to attend.

| Name | Position/affiliation | [Signature](#_Signature) | Date |
| --- | --- | --- | --- |
|  |  |  |  |