# 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): please read.

**N.B. DO NOT USE HIGHLIGHT, please DELETE THE WORDS THAT DO NOT APPLY TO YOUR PROPOSAL**

**ALL numbers in section (A) need to be completed, including the impact ones.**

|  |  |  |
| --- | --- | --- |
| A.1. [Course or program](#Proposal) | **PSCI 204 Understanding The Physical Universe** |  |
| [Replacing](#Ifapplicable)  |  |
| A.2. [Proposal type](#type) | **Course: creation**  |
| A.3. [Originator](#Originator) | **Andrea Del Vecchio** | [Home department](#home_dept) | **Physical Sciences** |
| A.4. [Context and Rationale](#Rationale)  | **The elementary education program has been redesigned and needs a new course in the physical sciences for some of its programd. This course will be an AQSR course with a lab that meets the needs of the new program while fulfilling the General Education requirements. This will allow the inclusion of a physical sciences course while keeping the degree program under 128 credits. Due to a need to cover certain core concepts needed to teach elementary school, some of the content will be similar to the previous course PSCI 103. However, there will be a shift in emphasis to integrate these basic concepts together to understand more complex earth and space science topics.** |
| A.5. [Student impact](#student_impact) | **Elementary education students will learn the physical sciences content necessary for their future teaching.** |
| A.6. [Impact on other programs](#impact)  | **This will replace the current Physical Sciences course options in some of the Elementary Education programs.** |
| A.7. [Resource impact](#Resource) | [*Faculty PT & FT*](#faculty):  | **None** |
| [*Library*:](#library) | **None** |
| [*Technology*](#technology) | **None** |
| [*Facilities*](#facilities): | **None** |
| A.8. [Semester effective](#Semester_effective) | **Fall, 2019** | A.9. [Rationale if sooner than next Fall](#Semester_effective) |  |
| A.10. INSTRUCTIONS FOR CATALOG COPY: This single file copy must include ALL relevant pages from the college catalog, and show how the catalog will be revised. (1) Go to the “Forms and Information” page on the UCC website. Scroll down until you see the Word files for the current catalog. (2) Download ALL catalog sections relevant for this proposal, including course descriptions and/or other affected programs. (3) Place ALL relevant catalog copy into a single file. Put page breaks between sections and delete any catalog pages not relevant for this proposal. (4) Using the track changes function, revise the catalog pages to demonstrate what the information should look like in next year’s catalog. (5) Check the revised catalog pages against the proposal form, especially making sure that program totals are correct if adding/deleting course credits. If new copy, indicate where it should go in the catalog. If making related proposals a single catalog copy that includes all is acceptable. Send as a separate file along with this form. |

B. [NEW OR REVISED COURSES](#delete_if)  **DO NOT use highlight. Delete this whole page if the proposal does not include a new or revised course.**

|  | Old ([for revisions only](#Revisions))Only include information that is being revised, otherwise leave blank (delete provided examples that do not apply) | NewExamples are provided for guidance, delete the ones that do not apply |
| --- | --- | --- |
| B.1. [Course prefix and number](#cours_title)  |  | **PSCI 204** |
| B.2. Cross listing number if any |  |  |
| B.3. [Course title](#title)  |  | **Understanding the Physical Universe** |
| B.4. [Course description](#description)  |  | Fundamental principles in physical science such as force, energy, cycles and the structure of matter are introduced and used to investigate varied applications and current issues in the physical sciences. |
| B.5. [Prerequisite(s)](#prereqs) |  | **BIOL 100 and MATH 144** |
| B.6. [Offered](#Offered) |  | **Fall | Spring | Summer |** |
| B.7. [Contact hours](#contacthours)  |  | **5** |
| B.8. [Credit hours](#credits) |  | **4** |
| B.9. [Justify differences if any](#differences) | This is both a lecture and a lab course. It will have 3 hours of lecture and 2 hours of lab per week. |
| B.10. [Grading system](#grading)  |  | **Letter grade**  |
| B.11. [Instructional methods](#instr_methods) |  | **| Laboratory | Lecture |**  |
| B.12.[Categories](#required) |  | **Required for major**  |
| B.13. Is this an Honors course? |  | **NO** |
| B.14. [General Education](#ge)N.B. Connections must include at least 50% Standard Classroom instruction. |  | **YES** **Category: AQSR** |
| B.15. [How will student performance be evaluated?](#performance) |  | **Attendance | Class participation | Exams | Class Work | Quizzes | Projects |**  |
| B.16. [Redundancy statement](#competing) |  | **This will be different from the PSCI 103—see above.** |
| B. 17. Other changes, if any |  |

| B.18**.** [**Course learning outcomes**](#outcomes)**: List each one in a separate row** | [**Professional Org.Standard(s)**](#standards)**, if relevant** | [**How will each outcome be measured**](#measured)**?** |
| --- | --- | --- |
| 1. To make experimental measurements and understand what these measurements represent.  |  | Labs |
| 2. To use the correct units and significant figures when taking measurements. |  | Problem sets, labs, quizzes, exams |
| 3. To set up and solve problems involving algebraic equations and to develop and understanding of what each variable in the equation represents. |  | Problem sets, labs, quizzes, exams |
| 4. To analyze and interpret data including constructing data tables, doing calculations, making graphs and interpreting graphs |  | Problem sets, labs, quizzes, exams, low stakes writing exercises |
| 5. To link laboratory observations to the theoretical concepts.  |  | Problem sets, labs, quizzes, exams, low stakes writing exercises |
| 6. To make observations and understand their significance  |  | Labs, low stakes writing exercises |
| 7. To make predictions and compare predictions to what you observe. |  | Labs, low stakes writing exercises |
| 8. To construct explanations from data |  | Problem sets, labs, quizzes, exams, low stakes writing exercises |
| 9. To make connections between different concepts and to put these concepts in context |  | Problem sets, labs, quizzes, exams, low stakes writing exercises |

| B.19. [**Topical outline**](#outline)**: Do NOT insert whole syllabus, we just need a two-tier outline**I. Principles: Motion, force and Energy* Position and displacement
* Velocity and Acceleration
* Force and Newton’s Laws
* Gravity
* Kinetic and Potential energy
* Conservation of Mechanical Energy
* Thermal expansion
* Specific heat and heat transfer
* Heat transfer mechanisms

II. Principles to Applications: Planetary Motion* Gravitation and orbital motion
* Seasons
* Phases of the Moon
* Tides

III. Principles: Mechanical Waves* Wave properties (wavelength, frequency, speed, amplitude, period)
* Properties of medium set the wave speed and source sets frequency
* Interference
* Basic introduction to sound

IV Principles to Applications: Waves in Earth Science* + Sound in the ocean
	+ Seismic waves

V. Principles: Electricity and Electric Circuits* Electric charge and electric force
* Voltage and current
* Series and parallel circuits
* Ohm’s Law applied to simple circuits
* Combining resistors in series or parallel
* Electric power
* Electromagnetic waves

VI. Principles to Applications: Climate and Alternative Energy* Climate
	+ Greenhouse effect
	+ Albedo
* Energy generation
	+ Conventional energy sources
	+ Alternative energy sources

VII. Principles: Chemistry* Atoms and their component particles
* Periodic table – atomic mass, atomic number, periodicity of properties
* Size and mass of the atom and the number of atoms in a bulk sample
* Atoms to molecules and compounds
* Density
* Chemical reactions
* Acids and bases

VIII. Principles to Applications: Water Quality* Acidification of bodies of water

Variation in oxygen level |
| --- |

## 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 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 and a printed or electronic signature copy of this form to the current Chair of UCC. Check UCC website for due dates.

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

| Name | Position/affiliation | [Signature](#_Signature" \o "Insert electronic signature, if available, in this column) | Date |
| --- | --- | --- | --- |
| Sarah Knowlton | Chair of Physical Sciences  |  |  |
| Carolyn Obel-Omia | Chair of Elementary Education |  |  |
| Earl Simson | Dean of Arts and Sciences |  |  |
| Gerri August | Co-Dean of the Feinstein School |  |  |
| Julie Horowitz | Co-Dean of the Feinstein School |  |  |
| Jefffrey Mello | Dean of the School of Business |  |  |
| Debra Servello | Dean of the School of Nursing |  |  |
| Jayashree Nimmagada | Dean of the School of Social Work |  |  |
| James Magyar | Chair of COGE |  |  |

##### D.2. [Acknowledgements](#acknowledge): REQUIRED from OTHER PROGRAMS/DEPARTMENTS 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

| Name | Position/affiliation | [Signature](#Signature_2) | Date |
| --- | --- | --- | --- |
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|  |  |  | Tab to add rows |