# 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) | **PSCI 216 Science of our changing planet** |  |
| [Replacing](#Ifapplicable)  |  |
| A. 1b. Academic unit | **Faculty of Arts and Sciences |**  |  |
| A.2. [Proposal type](#type) | **Course: creation**  |  |
| A.3. [Originator](#Originator) | **Sarah Knowlton** | [Home department](#home_dept) | **Physical Sciences** |
| A.4. [Context and Rationale](#Rationale) Must include additional information listed in smart tip for all [new programs](#type). If **online** course or program, you need to explain what mode(s) you plan to use and why you need that specific delivery.  | Context and Rationale: This course includes fundamental topics in geology, meteorology, climate, and pollution science to provide a broad understanding of earth system science. The class is designed for education majors and environmental studies majors. Students in science education and environmental studies need foundational knowledge in multiple areas of earth science, which this course will provide. Importantly, the course includes content on climate change from the physical science perspective, which is important for students in these fields. We anticipate this course will be included in the General Education program in the future. |
| A.5. [Student impact](#student_impact)Must include to explain why this change is being made? | With staffing changes in our department it is not possible to offer separate courses in Geology (PSCI 212) and Meteorology (PSCI 214) in the next few years. This course combines the topics into one class, which has the benefit of exposing students to multiple topics in one class.  |
| A.6. [Impact on other programs](#impact)  | **Other programs such as Environmental Studies and Secondary Education General Science may be affected and will submit separate UCC forms, if and when needed.**  |
| A.7. [Resource impact](#Resource) | [*Faculty PT & FT*](#faculty):  | **In the near term, fewer faculty load hours for this course compared to two separate courses** |
| [*Library*:](#library) | **none** |
| *Technology (for in person delivery)*The VP of Information Services should be consulted prior to submission and their acknowledgement signature included. | **\_x\_\_RIC Campus \_\_\_NEC \_\_\_Other \_\_\_\_ None****Projector | Doc camera |** **Lecture capture (in the classroom)** **\*Intend to use one of the lab rooms in the renovated CS building once it is completed. All technology needed will be in the room.** |
| *Technology: (for online delivery. Must be RIC supported)*The VP of Information Services should be consulted prior to submission and their approval signature included. | **n/a** |
| [*Facilities*](#facilities): | A.9. [Rationale if sooner than next Fall](#Semester_effective) |
| A.8. [Semester effective](#Semester_effective) | **Fall 2024** | A.9. [Rationale if sooner than next Fall](#Semester_effective) |  |
| 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: |
| A. 12 **Check to see if your proposal will impact any of our** [**transfer** **agreements,**](file:///C%3A%5CUsers%5CSAbbotson%5CDocuments%5CCurriculum%5CManualandWebsite%5Ctransfer%20agreements) **and if it does explain in what way. Please indicate clearly what will need to be updated, including any changes in prefix numbers/titles for TES.**There are no transfer agreement changes at this time. We are not removing any courses at this time, and this course is not equivalent to URI or CCRI courses.  |
|  |

**B.** [**NEW OR REVISED COURSES**](#delete_if) **FOR WHICH FULL CONTACT HOURS ARE MET IN PERSON and listed as such in the catalog. If the course will be also taught in other modes just fill out the questions that are noted at the top of sections C and/or D, as applicable.**

**Delete section B. if the proposal does not include a new or revised IN-PERSON course. As in section A. do not highlight but simply delete suggested options not being used. Always fill in b. 1 and B. 3 for context. NOTE: course learning outcomes and topical outlines only needed for new or substantially revised courses.**

|  | Old ([for revisions only](#Revisions))ONLY include information that is being revised, otherwise leave blank.  | NewExamples are provided within some of the boxes for guidance, delete just the examples that do not apply. |
| --- | --- | --- |
| B.1. [Course prefix and number](#cours_title)  |  | **PSCI 216** |
| B.2. Cross listing number if any |  |  |
| B.3. [Course title](#title)  |  | **Science of Our Changing Planet** |
| B.4. [Course description](#description)  |  | Students learn the science of natural and anthropogenic earth changes and time scales associated with them by investigating aspects of geology, meteorology, climate and pollution studies. |
| B.5. [Prerequisite(s)](#prereqs) |  | **none** |
| B.6. [Offered](#Offered) please read the screen tips to do this correctly, alternate years needs to be assigned odd/even, and a specific semester. |  | [**Annually**](#Annual) |
| B.7. [Contact hours](#contacthours)  |  | **4** |
| B.8. [Credit hours](#credits) |  | **4** |
| B.9. [Justify differences if any](#differences) |  |

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| B.10. [Grading system](#grading)  |  | **Letter grade |**  |
| B.11. [Type of cours](#instr_methods)e  | **|**  | **Lecture |**  |
| B.12. CATEGORIES 12. a. [How](#required) to be used |  | **Elective |** |
|  12 b. Is this an Honors  course? |  | **NO** |
|  12. c. [General Education](#ge) N.B. Connections must include at  least 50% Standard Classroom instruction. |  | **NO** |
|  12. d. Writing in the  Discipline (WID) |  | **NO** |
| B.13. [How will student performance be evaluated?](#performance)  |  | **Exams |****Class Work | Quizzes | Homework** |
| B.14 [Recommended class-size](#class_size" \o "Check appendix XVIII in the UCC Manual for Best Practices) |  | **24 (justification: when Clarke Science renovations are complete, we will run the course in a lab room to provide ability for hands on in class/lab type assignments)** |
| B.15. [Redundancy statement](#competing) |  |  |
| B. 16. Other changes, if any |  |

| B.17**.** [**Course learning outcomes**](#outcomes)**: List each one in a separate row*** Broadly describe earth systems using topics in geology, meteorology, climate science, and pollution studies (scientific literacy)
 | [**Professional Org.Standard(s)**](#standards)**, if relevant** | [**How will each outcome be measured?**](#measured)See B.13Quizzes, exams, and in class problem sets |
| --- | --- | --- |
| * Analyze and interpret earth science data, including identification of patterns and explanation of graphical trends (quantitative literacy)
 |  | See B.13Homework assignments that direct students to real data they must interpret based on content discussed in class. Examples include assignments such as interpretation of magnetic anomalies on the ocean floor and graphical depiction of hurricane data collected from the National Hurricane Center |
| * Examine and apply simple scientific models related to changes on earth over time (scientific literacy)
 |  | See B.13Quizzes, exams, in class problem sets, and homework assignments |
| * Apply straightforward computations to earth systems, with a focus on the calculation of rates and comparing the rates of various earth processes (quantitative literacy)
 |  | See B.13Quizzes, exams, in class problem sets, and homework. Examples include measurement of spreading rates at mid-ocean ridges, residence times, and radioactive decay rates. |
| * Assemble evidence to explain earth science observations, including demonstrated understanding of complex environmental issues (critical thinking)
 |  | See B.13Quizzes, exams, in class problem sets and homework. |
| * Compare long (e.g., millions of years) and short (e.g., weeks) time scale processes and explain the importance of the time scale on observed changes
 |  | Quizzes, exams, and homework. An example includes analysis of oxygen isotopes graphs to learn about past climate (hundreds of thousands of years) and compare to time scales for changes in climate we observe over the last few decades. |

| B.18. [**Topical outline**](#outline)**: DO NOT INSERT WHOLE SYLLABUS, JUST A TWO-TIER TOPIC OUTLINE suitable for the contact hours requested. Proposals that ignore this request will be returned for revision.** |
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| **Geology** * Earthquakes and Volcanoes
* Rock cycle
* Hydrogeology (floods), erosion
* Water resources, water cycle (reservoirs, fluxes, and residence time)

**Meteorology** * Layers and composition of the atmosphere
* Global wind patterns and local wind patterns (on shore breezes)
* Dew point, humidity, air density
* Synoptic meteorology (wind patterns, H/L pressure systems, air masses)
* Fronts; Weather maps
* Severe weather: Hurricanes; drought and wildfires

**Climate** * Internal and external forcing factors; carbon cycle; models – global vs local
* Paleoclimatology, including isotope models
* Observed changes in climate
* Climate resilience and mitigation

**Pollution** * Types and distribution of pollutants (hot topics – e.g., plastics, PFAS); how pollutants are transported in air and water
* How has the environment changed since the first Earth Day
* Complicated “fixes” to environmental problems.
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## **G. 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.**

##### G.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 |
| --- | --- | --- | --- |
| Andrea Del Vecchio | Chair of Physical Sciences | A close-up of a signature  Description automatically generated | 4/18/2024 |
| Quenby Hughes | Dean of Faculty of Arts and Sciences | A close-up of a signature with Wanamaker's in the background  Description automatically generated | 4/22/2024 |

##### G.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_2) | Date |
| --- | --- | --- | --- |
| Charles McLaughlin | Chair of Education Studies | Charlie McLaughlin | 04/18/24 |
| April Kiser | Director of Environmental Studies |  | 04/24/24 |