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

## Cover page roll over blue text to see further important [instructions](#instructions): please read.

**N.B. DO NOT USE HIGHLIGHT, JUST 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) | **physics 407** | | | |  |
| [Replacing](#Ifapplicable) |  | | | |  |
| A.2. [Proposal type](#type) | **Course: revision** | | | |  |
| A.3. [Originator](#Originator) | **Andrea Del Vecchio** | [Home department](#home_dept) | **Physical Sciences** | | |
| A.4. [Rationale](#Rationale) | **This is just a minor change of the course description to reflect moving the material on the hydrogen atom to PHYS 307. Also this course will now become a restricted elective in the physics program rather than a required course. This will increase the flexibility of our program and allow students to tailor their electives to their interests and career plans.** | | | | |
| A.5. [Date submitted](#date_submitted) | **3/31/17** | A.6. [Semester effective](#Semester_effective) Fall, 2017 | |  | |
| A.7. [Resource impact](#Resource) | *[Faculty PT & FT](#faculty" \o "Need to hire new full-time or part-time faculty? This is where you indicate if this proposal will be affecting FLH in your department/program.)*: | **None** | | | |
|  | [*Library*:](#library) | **None** | | | |
|  | [*Technology*](#technology) | **None** | | | |
|  | [*Facilities*](#facilities): | **None** | | | |
| A.8. [Program impact](#prog_impact) | **This would affect only the physics and physics secondary education programs.** | | | | |
| A.9. [Student impact](#student_impact) | **This will increase the flexibility of our program and help students to graduate in a timely manner.** | | | | |
| A.10. The following screen tips are for information on what to do about catalog copy until the new CMS is in place; check the “Forms and Information” page for updates. [Catalog page.](#catalog)  [Where are the catalog pages](#catalog)? [Several related proposals](#catalog)? Do **not** list catalog pages here. **All** catalog copy for a proposal must be contained within a **single** file; put page breaks between sections. Make sure affected program totals are correct if adding/deleting course credits. | | | | | |

B. [NEW OR REVISED COURSES](#delete_if) **DELETE THE WORDS THAT DO NOT APPLY TO YOUR PROPOSAL within specific categories, but do not delete any of the categories. DO NOT use highlight. Delete this whole page if this proposal does not include a new or revised course.**

|  | Old ([for revisions only](#Revisions)) | New |
| --- | --- | --- |
| B.1. [Course prefix and number](#cours_title) | **PHYS 407** | **PHYS 407** |
| B.2. Cross listing number if any |  |  |
| B.3. [Course title](#title) | **Quantum Mechanics II** | **Quantum Mechanics II** |
| B.4. [Course description](#description) | Topics include the hydrogen atom, angular momentum, spin, the structure of solids, nuclear physics, and particle physics. Lecture. (Formerly Quantum Mechanics.) | Topics include the structure of solids, approximation techniques, nuclear physics, and particle physics. Lecture. |
| B.5. [Prerequisite(s)](#prereqs) | **PHYS 201 and PHYS 307** | **PHYS 201 and PHYS 307** |
| B.6. [Offered](#Offered) | **Spring**  **Odd years** | **Spring**  **Even years** |
| B.7. [Contact hours](#contacthours) | **3** | **3** |
| B.8. [Credit hours](#credits) | **3** | **3** |
| B.9. [Justify differences if any](#differences) |  | |
| B.10. [Grading system](#grading) | **Letter grade** | **Letter grade** |
| B.11. [Instructional methods](#instr_methods) | **Lecture** | **Lecture** |
| B.12.[Categories](#required) | **Restricted elective for major/minor** | **Restricted elective for major/minor** |
| B.13. Is this an Honors course? | **NO** | **NO** |
| B.14. [General Education](#ge)  N.B. Connections must include at least 50% Standard Classroom instruction. | **NO** | **NO**  **:** |
| B.15. [How will student performance be evaluated?](#performance) | **Attendance | Class participation | Exams | Presentations |Class Work | Quizzes | Projects |** | **Attendance | Class participation | Exams | Presentations |Class Work | Quizzes | Projects |** |
| B.16. [Redundancy statement](#competing) |  |  |
| B. 17. Other changes, if any |  | |

| B.18**.** [**Course learning outcomes**](#outcomes) | [**Standard(s)**](#standards) | [**How will they be measured**](#measured)**?** |
| --- | --- | --- |
|  |  |  |

| B.19. [**Topical outline**](#outline) |
| --- |
| I. Formalism  A. Hibert Space  B. Observables  C. Eigenfunctions of a Hermitian Operator  D. Generalized Statistical Interpretation  E. The Uncertainty Principle  F. Dirac Notation  II Identical Particles  A. Two-Particle Systems  B. Atoms  C. Solids  D. Quantum Statistical Mechanics  III Applications (Chosen from the below as time permits)  A. Time-Independent Perturbation Theory  B. The Variational Principle  C. The WKB Approximation  D. Time-Dependent Perturbation Theory  E. The Adiabatic Approximation  F. Scattering  G. Particle Physics  H. Nuclear Physics |

## D. Signatures

##### D.1. Approvals

* 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](mailto: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.

| Name | Position/affiliation | [Signature](#_Signature" \o "Insert electronic signature, if available, in this column) | Date |
| --- | --- | --- | --- |
| Dr. Peter Meyer | Chair of Physical Sciences |  |  |
| Dr. Earl Simson | Dean of Arts of Sciences |  |  |
| Dr. Donald Halquist | Dean of the Feinstein School of Education and Human Development |  | Tab to add rows |

##### D.2. [Acknowledgements](#acknowledge)

| Name | Position/affiliation | [Signature](#Signature_2) | Date |
| --- | --- | --- | --- |
| Dr. Gerri August | Chair of Educational Studies |  |  |
|  |  |  |  |
|  |  |  | Tab to add rows |