# 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. 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 ever delete any of the numbered categories—if they do not apply leave them blank. ALL numbered categories in section (A) must be completed. If there are no resources impacted it is okay to put “none” in A. 7**

|  |  |  |
| --- | --- | --- |
| A.1. [Course or program](#Proposal) | **Math 300W: Bridge to Advanced Mathematics** |  |
| [Replacing](#Ifapplicable)  |  |
| A. 1b. Academic unit | **Faculty of Arts and Sciences**  |  |
| A.2. [Proposal type](#type) | **Course: revision**  |  |
| A.3. [Originator](#Originator) | **Mark Medwid** | [Home department](#home_dept) | **Mathematical Sciences** |
| A.4. [Context and Rationale](#Rationale) Note: Must include additional information in smart tip for all [new programs](#type) | **This is a revision to the course MATH 300W in which we adjust the list of prerequisites for the course. Specifically, we wish to change the requirement of MATH 213 (Calculus II) to MATH 212 (Calculus I).** **MATH 300W is a course covering the elements of deductive reasoning, symbolic logic, and essential proof techniques. It is for this reason that other major courses are gated behind success in MATH 300W. However, the timing of course offerings can make for an awkward waiting period between completion of MATH 213 and beginning MATH 300W. Ideally, a new mathematics major takes MATH 212 their first (fall) semester and then takes MATH 213 the following (spring) semester. Since MATH 300W is offered in the spring, students succeeding in MATH 213 have no choice but to wait until their following year to begin MATH 300W.** **Calculus content, especially that of MATH 213, is barely present in MATH 300W, if at all. The reasoning for requiring MATH 213 was that the students have more “mathematical maturity” after MATH 213 than they do after MATH 212. This is certainly true to an extent, but the gains in students’ mathematical maturity post-MATH 213 pale in comparison to the gains post-MATH 300W. Furthermore, changing the requirement would allow a new mathematics major to take both MATH 213 and MATH 300W simultaneously, and there are topics at the end of MATH 213 that will be significantly better understood if the students have a developing background in mathematical proof.**  |
| A.5. [Student impact](#student_impact)Must include to explain why this change is being made? | **Being able to introduce a key course in a student’s first year as a mathematics major will open their course options as well as enhance their understanding of other elective mathematics courses for which MATH 300W is not a formal prerequisite (e.g., MATH 431-Number Theory and MATH 436-Discrete Mathematics).** |
| A.6.a. [Impact on other programs](#impact)  | **Students taking MATH 300W in Educational Studies may be able to take it earlier with this new prerequisite and will need to update their Academic Rhode Maps.** |
| A.6.b. Will this impact [transfer agreements](file:///C%3A%5CUsers%5Cmarkm%5CDownloads%5CCheck%20relevant%20JAAs%2C%202%2B2s%2C%20and%20if%20a%20course%20you%20are%20revising%20or%20deleting%20is%20one%20with%20a%20transfer%20agreement)? Explain how and list what needs to be updated. | **No impact** |
| 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 2022** | 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: |

B. [NEW OR REVISED COURSES](#delete_if)  **Delete section B if the proposal does not include a new or revised 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.**

|  | 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)  | **MATH 300W** | **MATH 300W** |
| B.2. Cross listing number if any |  |  |
| B.3. [Course title](#title)  | **Bridge to Advanced Mathematics** | **Bridge to Advanced Mathematics** |
| B.4. [Course description](#description)  |  |  |
| B.5. [Prerequisite(s)](#prereqs) | **MATH 213 or consent of department chair** | **MATH 212 or consent of department chair** |
| B.6. [Offered](#Offered) |  |  |
| B.7. [Contact hours](#contacthours)  |  |  |
| B.8. [Credit hours](#credits) |  |  |
| B.9. [Justify differences if any](#differences) |  |
| B.10. [Grading system](#grading)  |  |  |
| B.11. [Instructional methods](#instr_methods) |  |  |
| B.11.a [Delivery Method](#instr_methods) |  |  |
| B.12. CATEGORIES 12. a. [How](#required) to be used |  |  |
|  12 b. Is this an Honors  course? |  |  |
|  12. c. [General Education](#ge) N.B. Connections must include at  least 50% Standard Classroom instruction. |  |  |
|  12. d. Writing in the  Discipline (WID) |  |  |
| B.13. [How will student performance be evaluated?](#performance) |  |  |
| B.14 [Recommended class-size](#class_size" \o "Check appendix XVIII in the UCC Manual for Best Practices) |  |  |
| B.15. [Redundancy statement](#competing) |  |  |
| B. 16. Other changes, if any | Not that on the catalog copy there is a reference to MATH 300 as a prerequisite for MATH 315—this should be MATH 300 or MATH 300W to allow Records to keep track. |

| B.17**.** [**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)**?** |
| --- | --- | --- |
|  |  |  |

| B.18. [**Topical outline**](#outline)**: DO NOT INSERT WHOLE SYLLABUS, JUST A TWO-TIER TOPIC OUTLINE. Proposals that ignore this request will be returned for revision.** |
| --- |
| 1. Sentential & Quantificational Logic
	1. Symbolic logical statements
	2. Logical operators (conjunction, disjunction, negation)
	3. Truth tables
	4. Sets / Truth sets
	5. Conditional and biconditional statements
2. Methods of Proof
	1. Direct proof
	2. Proof by contrapositive
	3. Proofs involving biconditional statements
	4. Proofs involving conjunction, disjunction, and negation
	5. Proof by contradiction
	6. Existence and uniqueness proofs
	7. Set-theoretic or “element-chasing” proofs
	8. Proof by mathematical induction
	9. Classical examples of proofs (e.g., the infinitude of prime numbers or the irrationality of $\sqrt{2}$)
3. Mixture of elementary mathematics for proof practice, potentially including (but not limited to):
	1. Set relationships
	2. Number-theoretic statements
	3. Functions/mappings
	4. Inequalities
	5. Equivalence relations and equivalence classes
 |

## 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 and a printed signature copy of this whole 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. 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 |
| --- | --- | --- | --- |
| Rebecca Sparks | Chair of Department of Mathematical Sciences | \*approved by e-mail | 4/12/22 |
| Earl Simson | Dean of the Faculty of Arts and Sciences | Earl Simson | 4/14/22 |

##### 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_2) | Date |
| --- | --- | --- | --- |
| Lesley Bogad | Chair Educational Studies | \*Acknowledged by e-mail | 4/13/22 |
| Jeannine Dingus-Eason | Dean FSEHD | *Jeannine E. Dingus-Eason* | 5/6/2022 |
| Vivian La Ferla | Coordinator MATH SED | \*Acknowledged by e-mail | 4/13/22s |