# 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) | **CSCI 435 – Operating SYSTEMS**  |  |
| [Replacing](#Ifapplicable)  | **CSCI 435 – Operating SYSTEMS AND COMPUTER ARCHITECTURE** |
| A. 1b. Academic unit | **Faculty of Arts and Sciences**  |  |
| A.2. [Proposal type](#type) | **Course: revision**  |  |
| A.3. [Originator](#Originator) | **Suzanne Mello-Stark** | [Home department](#home_dept) | **Computer Science and Information Systems** |
| A.4. [Context and Rationale](#Rationale) Note: Must include this additional information for all [new programs](#type) | **Propose updating CSCI 435 –Operating Systems and Computer Architecture to meet contemporary standards starting Fall 2021. The course will now have a larger emphasis on performance, privacy and security concerns. A major programming project has also been added. The overall proposed changes are as follows:****1)Change title from Operating Systems and Computer Architecture to Operating Systems.****2)updated description to include the performance, privacy and security topics****3)Changed from 3 to 4 credits to add the major project, and this will add one credit to the CSCI programs (BA and BS), but this will be offset by other revisions.**  |
| A.5. [Student impact](#student_impact) | **Students gain the opportunity to learn more about operating system security and performance while getting more hands-on experience.** |
| A.6. [Impact on other programs](#impact)  | **None** |
| 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 2021** | 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 preferred. Send catalog copy as a separate single Word file along with this form. |

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)  | **CSCI 435** | **CSCI 435** |
| B.2. Cross listing number if any |  |  |
| B.3. [Course title](#title)  | **OPERATING SYSTEMS AND COMPUTER ARCHITECTURE** | **OPERATING SYSTEMS** |
| B.4. [Course description](#description)  | Topics include instruction sets, I/O and interrupt structure, addressing schemes, memory management, process management, performance, and evaluation. | Students explore topics of modern operating systems such as process management and synchronization, CPU scheduling and memory management. Emphasis is placed on increasing OS performance, while enhancing privacy and security. |
| B.5. [Prerequisite(s)](#prereqs) |  |  |
| 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](#required) |  |  |
| B.13. Is this an Honors course? |  |  |
| B.14. [General Education](#ge)N.B. Connections must include at least 50% Standard Classroom instruction. |  |  |
| B.15. [How will student performance be evaluated?](#performance) |  |  |
| B.16 [Recommended class-size](#class_size" \o "Check appendix XVIII in the UCC Manual for Best Practices) |  |  |
| B.17. [Redundancy statement](#competing) |  |  |
| B. 18. Other changes, if any |  |

| B.19**.** [**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)**?** |
| --- | --- | --- |
| Be able to identify basic components of OS Security |  | By Homework |
| Students will implement a project that strengthens their knowledge |  | By Project |
|  |  | Click Tab from here to add rows |

| B.20. [**Topical outline**](#outline)**: DO NOT INSERT WHOLE SYLLABUS, JUST A TWO-TIER TOPIC OUTLINE. Proposals that ignore this request will be returned for revision.** |
| --- |
| Topic         Week(s)  Introduction 1 What Operating Systems Do Computer-System Organization OS Security  Processes 1 Process Concept Process Scheduling  Multi-Programming/Concurrency 2 Concurrency Challenges Amdahl’s Law Types of Parallelism Thread Libraries Signals   CPU Scheduling 1 Basic Concepts Scheduling Criteria Scheduling Algorithms   Process Synchronization 2 The Critical-Section Problem Semaphores Classic Problems of Synchronization  Main Memory 1 Swapping Paging Buffer Overflow Problems  Virtual Memory 2 Demand Paging Page Replacement Thrashing  I/O Systems 1 I/O Hardware Transforming I/O Requests to Hardware Operations   Additional Topics                          1       Cover additional topics of interest to the instructor and/or students as time permits.  * File-System Interface
* Additional Security Topics
* Distributed System Structures
* Real-Time Systems
* Mobile Operating Systems
* Deadlocks

 Project  1  The course will include at least one project of the Instructor’s choice to strength the student’s in-depth knowledge.   Testing and Review 1 \_\_\_\_\_\_\_\_\_\_\_\_  |
|  |

## 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 |
| --- | --- | --- | --- |
| Dr. Lisa Bain | Chair of Computer Science and Information Systems | \*approved via e-mail | 12/03/2020 |
| Dr. Earl Simson | Dean of Faculty of Arts and Sciences | **Earl Simson** | 12/03/2020 |

##### 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 |
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|  |  |  |  |
|  |  |  | Tab to add rows |