# 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. DO NOT USE HIGHLIGHT, where choices are given within categories, please DELETE those THAT DO NOT APPLY TO YOUR PROPOSAL. Do not delete numbered categories.**

**ALL numbers in section (A) to be completed, including the impact ones (#5-7), put “none” if that is the case.**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| A.1. [Course or program](#Proposal) | **CSCI 432- Network and Systems Security** | | | |  |
| [Replacing](#Ifapplicable) |  | | | |
| A.2. [Proposal type](#type) | **COURSE:** [**creation**](#creation) | | | |
| A.3. [Originator](#Originator) | **SUZANNE MELLO-STARK** | HOME DEPARTMENT | **MATHEMATICS AND COMPUTER SCIENCE** | | |
| A.4. [Context and Rationale](#Rationale) | **This course provides an overview of network and systems security which plays an integral role in cyber security.**  **This course is intended for all students pursuing the cyber security minor. It is meant to provide students with a broad spectrum of current knowledge of network and system security. The instructor can assume that students possess basic knowledge of computer science, cyber security and programming.**  **Students will gain knowledge in designing secure networks and identifying vulnerabilities in an organization’s network. Students will study various attacks and learn to identify them.**    **Students will be given virtual machine appliances populated with systems that still contain vulnerabilities and will learn how to find, exploit and fix them. In many cases this will require students to write scripts to reenact the exploit.**  **Ethics, current events, cyber security laws and standards concerning network and system security will be introduced.** | | | | |
| A.5. [Student impact](#student_impact) | **All students on campus will be able to earn a cyber security minor. It will be significantly attractive for students earning BAs in technical or public policy fields. No negative student impacts.** | | | | |
| A.6. [Impact on other programs](#impact) | **none** | | | | |
| A.7. [Resource impact](#Resource) | [*Faculty PT & FT*](#faculty): | **Existing Faculty** | | | |
| [*Library*:](#library) | **None** | | | |
| [*Technology*](#technology) | **None** | | | |
| [*Facilities*](#facilities): | **None** | | | |
| A.8. [Semester effective](#Semester_effective) | **FALL 2020** | 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 single file along with this form. | | | | | |

B. [NEW OR REVISED COURSES](#delete_if)  **DO NOT use highlight. Do not delete numbered categories, just leave blank if they do not apply. Delete this whole page if the proposal does not include a new or revised course. 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. | New Examples 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 432** |
| B.2. Cross listing number if any |  |  |
| B.3. [Course title](#title) |  | **Network and Systems Security** |
| B.4. [Course description](#description) |  | **Students will study a survey of network and systems security topics such as packet analysis, penetration testing and intrusion detection. Students will practice with tools/techniques used by security professionals.** |
| B.5. [Prerequisite(s)](#prereqs) |  | **CSCI 402** |
| B.6. [Offered](#Offered) |  | **Spring** |
| B.7. [Contact hours](#contacthours) |  | **4** |
| B.8. [Credit hours](#credits) |  | **4** |
| B.9. [Justify differences if any](#differences) |  | |
| B.10. [Grading system](#grading) |  | **Letter grade** |
| B.11. [Instructional methods](#instr_methods) |  | **Lecture** |
| B.12.[Categories](#required) |  | **Required for minor |** |
| B.13. Is this an Honors course? |  | **NO** |
| B.14. [General Education](#ge)  N.B. Connections must include at least 50% Standard Classroom instruction. |  | **NO**  **category:** |
| B.15. [How will student performance be evaluated?](#performance) |  | **Attendance | Class participation | Exams | Presentations**  **Class Work | Quizzes | Projects |** |
| B.16 [Recommended class-size](#class_size" \o "Check appendix XVIII in the UCC Manual for Best Practices) |  | **24** |
| B.17. [Redundancy statement](#competing) |  | **NO** |
| B. 18. 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)**?** |
| --- | --- | --- |
| Conduct a thorough footprinting and scanning exercise. | N/A | Presentation, class work and group project |
| Perform a detailed packet analysis using a packet sniffer tool. | N/A | Presentation, class work and group project |
| Demonstrate the ability to secure a database and host. | N/A | Presentation, class work and group project |
| Describe basic wireless, web and database vulnerabilities and social engineering techniques. | N/A | Quizzes and exams |
| Understand how to conduct a basic malware analysis. | N/A | Presentation and group project |

| B.19. [**Topical outline**](#outline)**: DO NOT INSERT WHOLE SYLLABUS, JUST A TWO-TIER TOPIC OUTLINE. Proposals that ignore this request will be returned for revision.** |
| --- |
| Ethical Hacking (2 weeks)  Steps of a White Hat and Black Hat Hacker  Footprinting  Port Scanning  Social Engineering  Penetration Testing  Network Analysis (2 weeks)  Detailed Packet Analysis  Incident and Intrusion Detection and Response    Intrusion Detection Systems (2 weeks)  Types of Intrusion Detection Systems  Design and implementation of an IDS    Wireless Vulnerabilities (2 weeks)  Mobile and IoT vulnerabilities  WiFi Attacks on WPA, WPA2  Web Attacks (2 weeks)  Securing a host  Cross site request forgery  Cross site scripting attack  Database Attacks (2 weeks)  SQL Injection Identification, Exploitation and Defense  Security Auditing/Testing  Backup and Disaster Recover Plans  Malware Analysis (1 week)  Techniques to find and detect malware  Analysis of malware in crash dump files  Course Review and Testing (1 week) |

## 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](mailto: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. 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. Stephanie Costa | Chair of Mathematics and Computer Science |  |  |
| Dr. Earl Simson | Dean  Faculty of Arts and Sciences |  |  |
|  |  |  |  |

##### 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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