# http://www.ric.edu/webcommunications/images/SealWithText_Small_Black.pnggraduate COMMITTEE curriculum PROPOSAL FORM

## Cover page scroll over blue text to see further important [instructions](#1v1yuxt): please read.

**N.B. DO NOT USE HIGHLIGHT, PLEASE DELETE THE WORDS THAT DO NOT APPLY TO YOUR PROPOSAL**

**ALL numbers in section (A) need to be completed, including the impact ones.**

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| A.1. [Course or program](#30j0zll) | **ELED 517: Computer Science for Elementary and Middle School** | | | |  |
| [Replacing](#2et92p0) |  | | | |
| A.2. [Proposal type](#tyjcwt) | **Course: Creation** | | | |
| A.3. [Originator](#4d34og8) | **Karen Capraro** | [Home department](#2s8eyo1) | **Elementary Education** | | |
| A.4. [Context and Rationale](#17dp8vu) | The Elementary Education Department has carefully reviewed the course sequence in the M.A.T. Elementary Education program. Some new courses have been added, and existing courses re-sequenced and modified to provide learning opportunities that mirror the changing field of Elementary Education in RI and across the country.  The International Society for Technology in Education (ISTE) states, “In an increasingly digital world, computer science plays a star role.” Faculty from the M.A.T. Elementary Education Program recognize that advances in technology have transformed, and will continue to transform, the landscape in teaching and learning. M.A.T. faculty have worked together on reimagining courses to better prepare Teacher Candidates to utilize Educational Technology for teaching and learning in the elementary classroom.  As a result of the above-mentioned, a new course was created: ELED 515. This course will be will offered during Summer I to familiarize teacher candidates with key ISTE Computer Science Standards including (1) Computer Science content, (2) effective Computer Science teaching and learning strategies, (3) effective learning environments for Computer Science, and (4) effective professional knowledge and skills. The placement of this course, during Early Spring was intentionally designed to ­­­­­provide teacher candidates with Computer Science information during Early Spring so they may apply what they learned during student teaching. | | | | |
| A.5. [Student impact](#3rdcrjn) | Additional Course Offering in a content area they will be expected to apply. | | | | |
| A.6. [Impact on other programs](#19c6y18) | no | | | | |
| A.7. [Resource impact](#3tbugp1) | [*Faculty PT & FT*](#28h4qwu): | **none** | | | |
| [*Library*:](#nmf14n) | **none** | | | |
| [*Technology*](#37m2jsg) | **none** | | | |
| [*Facilities*](#1mrcu09): | **none** | | | |
| A.8. [Semester effective](#35nkun2) | **Fall 2019** | A.9. [Rationale if sooner than next Fall](#35nkun2) | |  | |

B. [NEW OR REVISED COURSES](#46r0co2)  **DO NOT USE HIGHLIGHT. DELETE THIS WHOLE PAGE IF THE PROPOSAL DOES NOT INCLUDE A NEW OR REVISED COURSE.**

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|  | Old ([for revisions only](#2lwamvv)) Only include information that is being revised, otherwise leave blank (delete provided examples that do not apply) | New Examples are provided for guidance, delete the ones that do not apply |
| B.1. [Course prefix and number](#1ksv4uv) |  | **ELED 517** |
| B.2. Cross listing number if any |  |  |
| B.3. [Course title](#44sinio) |  | **Computer Science for Elementary and Middle School** |
| B.4. [Course description](#2jxsxqh) |  | Teacher candidates are offered an opportunity to explore the fundamentals of K-8 Computer Science including computational thinking & programming, computing systems & networking, cybersecurity, data & analysis, digital literacy, and responsible computing in society.  The course will also address current Computer Science Standards including the Computer Science Teachers Association (CSTA) K-12 Computer Science Standards, and the Rhode Island K-12 Computer Science Education Standards. |
| B.5. [Prerequisite(s)](#z337ya) |  | **None** |
| B.6. [Offered](#111kx3o) |  | **Early Spring** |
| B.7. [Contact hours](#1y810tw) |  | **15** |
| B.8. [Credit hours](#4i7ojhp) |  | **1** |
| B.9. [Justify differences if any](#2xcytpi) |  | |
| B.10. [Grading system](#206ipza) |  | **Letter grade |** |
| B.11. [Instructional methods](#1ci93xb) |  | **Hybrid|** |
| B.12.[Categories](#3whwml4) |  | **Required for major** |
|  |  | **NO** |
| B.14. [General Education](#2bn6wsx)  N.B. Connections must include at least 50% Standard Classroom instruction. |  | **NO** |
| B.15. [How will student performance be evaluated?](#qsh70q) |  | **Presentations | Papers |**  **Performance Protocols | Projects |** |
| B.16. [Redundancy statement](#3as4poj) |  |  |
| B. 17. Other changes, if any |  | |

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| B.18**.** [**Course learning outcomes**](#1pxezwc)**: List each one in a separate row** | [**Professional Org.Standard(s)**](#49x2ik5)**, if relevant**  ISTE – International Society for Technology in Education - Standards for Technological Literacy  ISTE – International Society for Technology in Education – Computer Science Educators  ISTEE – International Technology and Engineering Educators Association  RIPTS – Rhode Island Professional Teaching Standards | [**How will each outcome be measured**](#2p2csry)**?** |
| 1. At the completion of this course, all teacher candidates will be able to explain the ISTE  Standards | ISTE Computer Science Educators–  2. Computer Science Educators demonstrate effective content pedagogical strategies that make the discipline comprehensible to students.  4. Computer Science Educators demonstrate professional knowledge and skills in their field and readiness to apply them.  RIPTS –  2. Teachers have a deep content knowledge base sufficient to create learning experiences that reflect an understanding of central concepts, vocabulary, structures, and tools of inquiry of the disciplines/content areas they teach. | **Quiz** |
| 2. At the completion of the course, all teacher candidates will be able to apply computational thinking & programming to:  • Algorithms  • Variables  • Data Structures &  Data Types  • Control Structures  • Modularity  • Computational  Design  *(Aligned with RI K-12 Computer Science Standards)* | ISTE Computer Science Educators –  1. Computer Science Educators demonstrate knowledge of Computer Science content and model important principles and concepts.  ISTE Standards for Technological Literacy –  4. Model digital age work and learning | **Completion of Online Module** |
| 3. At the completion of the course, all teacher candidates will be able to  describe computing systems & networking in terms of:  • Human-Computer  Interaction  • Hardware & Software  • Troubleshooting  • Networks & the Internet  *(Aligned with RI K-12 Computer Science Standards)* | ISTE Computer Science Educators –  1. Computer Science Educators demonstrate knowledge of Computer Science content and model important principles and concepts.  ISTE Standards for Technological Literacy –  4. Model digital age work and learning | **Completion of Online Module** |
| 4. At the completion of the course, all teacher candidates will be able to summarize cybersecurity in terms of:  • Risks  • Safeguards  • Response  *(Aligned with RI K-12 Computer Science Standards)* | ISTE Computer Science Educators –  1. Computer Science Educators demonstrate knowledge of Computer Science content and model important principles and concepts.  ISTE Standards for Technological Literacy –  4. Model digital age work and learning | **Completion of Online Module** |
| 5. At the completion of the course, all teacher candidates will be able to explain and apply data & analysis to:  • Collection, Visualization, & Transformation  • Inference & Models  • Storage  *(Aligned with RI K-12 Computer Science Standards)* | ISTE Computer Science Educators –  1. Computer Science Educators demonstrate knowledge of Computer Science content and model important principles and concepts.  ISTE Standards for Technological Literacy –  4. Model digital age work and learning | **Completion of Online Module** |
| 6. At the completion of the course, all teacher candidates will be able to define  digital literacy as related to:  • Creation & Use  • Searching Digital Information  • Understanding Software Tools  *(Aligned with RI K-12 Computer Science Standards)* | ISTE Computer Science Educators –  1. Computer Science Educators demonstrate knowledge of Computer Science content and model important principles and concepts.  ISTE Standards for Technological Literacy –  4. Model digital age work and learning | **Completion of Online Module** |
| 7. At the completion of this course, all teacher candidates will be able to explain responsible computing in society in terms of:  • Culture  • Safety, Law, & Ethics  • Social Interactions  *(Aligned with RI K-12 Computer Science Standards)* | ISTE Computer Science Educators –  1. Computer Science Educators demonstrate knowledge of Computer Science content and model important principles and concepts.  3. Computer Science Educators apply their knowledge of learning environments by creating and maintaining safe, ethical, supportive, fair, and effective learning environments for all students.  ISTE Standards for Technological Literacy –  4. Promote and model digital citizenship and responsibility | **Quiz** |

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| B.19. [**Topical outline**](#147n2zr)**: Do NOT insert whole syllabus, we just need a two-tier outline** |
| 1. F2F – 2.5 hours   Introduction  a) Syllabus, Assignments, Grading, etc.  b) CS Standards  c) Responsible Computing in Society  • Culture  • Safety, Law, & Ethics  • Social Interactions  2) Online – 2.5 hours  Module 1   1. Computational Thinking & Programming   • Algorithms  • Variables  • Data Structures & Data Types  • Control Structures  • Modularity  • Computational Design  3) Online – 2.5 hours  Module 2  a) Computing systems & Networking  • Human-Computer Interaction  • Hardware & Software  • Troubleshooting  • Networks & the Internet  4) Online – 2.5 hours  Module 3  a) Cybersecurity  • Risks  • Safeguards  • Response  5) Online – 2.5 hours  Module 4  a) Data & Analysis  • Collection, Visualization, & Transformation  • Inference & Models  • Storage  6) Online- 2.5 hours  Module 5  a) Digital Literacy  • Creation & Use  • Searching Digital Information  • Understanding Software Tools |

## 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 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.

##### D.1. Approvals: required from programs/departments/deans who originate the proposal. may include multiple departments, e.g., for joint/interdisciplinary proposals.

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| Name | Position/affiliation | [Signature](#_2zbgiuw) | Date |
| Carolyn Obel-Omia | Chair of Elementary Education |  |  |
| Martha Horn | M.A.T. Program Coordinator |  |  |
| Julie Horwitz/Gerri August | Co-Dean of FSEHD |  |  |

##### D.2. [Acknowledgements](#vx1227): REQUIRED from OTHER PROGRAMS/DEPARTMENTS 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

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| Name | Position/affiliation | [Signature](#3fwokq0) | Date |
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