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

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| A.1. [Course or program](#Proposal) | **MINOR IN Artificial IntelligEnce** |  |
| [Replacing](#Ifapplicable)  |  |
| s | **School of Business**  |  |
| A.2. [Proposal type](#type) | **Program:** [**creation**](#creation) |  |
| A.3. [Originator](#Originator) | **Timothy Henry** | [Home department](#home_dept) | **CSIS (Computer Science and Information Systems)** |
| A.4. [Context and Rationale](#Rationale) Must include additional information listed in smart tip for all [new programs](#type). If **online** course or program, you need to explain what mode(s) you plan to use and why you need that specific delivery.  | The CSIS Dept would like to expand our offerings to include a minor in Artificial Intelligence to meet the demands of our existing and potential students and employers in the IT industry. This new AI minor uses a combination of existing computer science and math courses. Artificial Intelligence (AI) and Machine Learning (ML) are rapidly transforming the world and are some of the most in-demand skills in the job market today. AI is being used in a wide range of industries, from healthcare to finance to defense to manufacturing, and is expected to create 133 million new jobs by 2030 ([McKinsey](https://www.mckinsey.com/featured-insights/artificial-intelligence/five-fifty-fear-fear-not)). About 65% of companies are currently using AI internally, while 74% are testing it ([Deloitte](https://www2.deloitte.com/us/en/pages/about-deloitte/articles/technology-trust-ethics-annual-report.html)). Almost 25% of jobs are expected to be “disrupted” by AI over the next five years ([World Economic Forum](https://www3.weforum.org/docs/WEF_Future_of_Jobs_2023.pdf)). ***Rhode Island College has a responsibility to prepare our graduates for this new workplace.***The CSIS Dept at Rhode Island College currently offers B.S. degrees in Computer Information Systems, Computer Science and Cybersecurity and a B.A. in Computer Science. It also offers minors in Cybersecurity, Data Analytics, and Web Development. Rhode Island College has the opportunity to become a leader in this field as few other peer university in the region offers a bachelor’s degree in Artificial Intelligence or Machine Learning. Most schools offering undergraduate degrees in AI are large research schools.Incorporating a minor in Artificial Intelligence (AI) into an undergraduate program addresses the growing importance of AI technologies across various sectors, from healthcare to finance, and from environmental management to entertainment. This interdisciplinary approach equips students with a foundational understanding of AI principles, machine learning algorithms, data analysis, and ethical considerations, enabling them to apply these skills in their major field of study or future career paths. As AI continues to shape the future of work, an AI minor not only enhances employability by meeting the increasing demand for AI-literate professionals but also fosters critical thinking, problem-solving, and ethical decision-making in the face of technological advancements.We realize that the 27 - 28 credits for the AI Minor are high, but it is expected the minor mostly will be taken by Computer Science, Data Science, and Math majors. Students in these majors will already have taken most of the prerequisite courses needed for the more advanced courses, such as CSCI 427. Either of the required MATH classes also doubles as a M. Gen Ed. so that keeps this to the allowed credit limit (23-24).For *Computer Science B.S. Majors* to minor in AI, they would need to select MATH 240 from their cognates pool, which counts toward their CS major. Then they only need to take CSCI 427 and CSCI 428 (which are electives in their major). A *Computer Science B.A.* would need to select MATH 240 as a general elective and then CSCI 427 and CSCI 428 (which are electives in their major).For *Data Science Majors*, they would need to take CSCI 212W, CSCI 427 and CSCI 428. A *Math Major* would only need the same courses if CSCI 157, MATH 240, MATH 436 were the restricted electives selected for their major. Note: MATH 436 can serve as a replacement for CSCI 209 with consent of department chair.  |
| A.5. [Student impact](#student_impact)Must include to explain why this change is being made? | The new program has the potential to attract *new* students to the college and meet the increasing hiring demands of local and national employers. Students primarily interested in Computer Science or Data Science, but wishing to have more than just a course in AI as other schools offer would be drawn to RIC by this minor.This program packages existing computer science and artificial intelligence courses in a way that supports these programs. Having artificial intelligence majors in these courses expands the learning opportunities for all our students.The new artificial intelligence and machine learning courses created for the program can provide *existing* students with additional electives to enhance their technology skillsets.  |
| A.6. [Impact on other programs](#impact)  | Existing CS, Cybersecurity, Data Analytics, Web Development, and Data Science minor students may switch their minor to the new Artificial Intelligence minor thus reducing the number of students in those programs. The AI minor includes MATH 212 and MATH 240; therefore, those courses may see an increase in enrollment. |
| A.7. [Resource impact](#Resource) | [*Faculty PT & FT*](#faculty):  | Existing CSCI faculty and/or adjunct faculty will teach the courses. Depending on the growth of the new AI Program, additional faculty and adjuncts may be needed. |
| [*Library*:](#library) | None |
| *Technology (for in person delivery)* | None. Courses will use existing classrooms and/or computer labs. |
| *Technology: (for online delivery. Must be RIC supported)* | None |
| [*Facilities*](#facilities): | None. Courses will use existing classrooms and/or computer labs. |
| A.8. [Semester effective](#Semester_effective) | **Fall 2024** | A.9. [Rationale if sooner than next Fall](#Semester_effective) | **N/A** |
| 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:**Undergraduate Business Programs** – add AI major to page<https://www.ric.edu/academics/undergraduate-programs/undergraduate-business-programs>**Institute for Cybersecurity and Emerging Technologies** – add link to AI major page.<https://www.ric.edu/academics/institute-cybersecurity-emerging-technologies> |
| A. 12 **Check to see if your proposal will impact any of our** [**transfer** **agreements,**](file:///Users/SAbbotson/Documents/Curriculum/ManualandWebsite/transfer%20agreements) **and if it does explain in what way. Please indicate clearly what will need to be updated, including any changes in prefix numbers/titles for TES.****N/A** |
| A. 13 Check the section that lists “Possible NECHE considerations” on the UCC Forms and Information page and if any apply, indicate what that might be here and contact Institutional Research for further guidance.**N/A** |

**E.** [**Program Proposals**](#program_proposals) **For IN-Person or mixed modalities (for fully online programs: see section F):**

### **Complete only what is relevant to your proposal. Delete section E. if not needed. PLease add in the 2020 CIP number for MAJOR revisions or new programs in E 2; these can be found at** [**https://nces.ed.gov/ipeds/cipcode/browse.aspx?y=56**](https://nces.ed.gov/ipeds/cipcode/browse.aspx?y=56) **consult with Institutional research to be sure you select the correct one.**

|  |  | New/revised |
| --- | --- | --- |
| E.1. [Enrollments](#enrollments) Must be completed. |  | **40** |
| E. 2. [2020 CIP number](#CIPnumber" \o "THESE CAN BE FOUND AT HTTPS://NCES.ED.GOV/IPEDS/CIPCODE/BROWSE.ASPX?Y=56 CONSULT WITH INSTITUTIONAL RESEARCH TO BE SURE YOU SELECT THE CORRECT ONE.) |  | **11.0102** |
| E.3. [Admission requirements](#admissions) |  | **N/A** |
| E.4. [Retention requirements](#retention) |  | **N/A** |
| E.5. [Course requirements](#course_reqs) for each program option. Show the course requirements for the whole program here. |  | **Required Courses (20 credits)*** CSCI 211 Computer Programming and Design [4 cr]

 Or CSCI 157 Introduction to Algorithmic Thinking in Python [4 cr]* CSCI 209 Programming Implementation of Discrete Structures [4 cr]

 Or MATH 436 Discrete Mathematics [3 cr]* CSCI 212W Data Structures [4 cr]
* CSCI 427 Artificial Intelligence Foundations [4 cr]
* CSCI 428 Machine Learning [4 cr]

**Cognates (8 Credits)*** MATH 212 Calc I [4 cr]
* MATH 240 Statistical Methods I [4 cr]
 |
| E.6. [Credit count](#credit_count) for each program option |  | **Required Courses (19-20 credits)****Cognates (8 Credits)****Total: (27-28 credits)** |
| E.7. Note any needs for program accreditation (if relevant).  |  | **N/A** |
| E.8 Program modality. Online percentage of delivery; calculate % within required hybrids and the total for the program cannot go over 49%  |  | **Mixed course types (20 - 25 % online)** |
| E.9 Will any classes be offered at sites other than RIC campus or the RI Nursing Ed. Center?\* |  | **NO** |
| E. 10. Do these revisions reflect more than 25% change to the [program?\*](file:///Users/sabbotson/Documents/Curriculum/Program%20goals)  |  | **NO** |
| E.11. [Program goals](file:///Users/sabbotson/Documents/Curriculum/Program%20goals)Needed for all new programs |  | Upon the completion of this program, students will be able to:* Create AI models that adapt to dynamic and evolving data, demonstrating adaptability and flexibility.
* Evaluate the performance of AI models, considering metrics like accuracy, precision, recall, and F1-score.
* Compare and contrast various AI techniques for specific applications, identifying their strengths and weaknesses.
* Critically assess the ethical, legal, and societal impacts of AI technology by examining issues like bias, fairness, and privacy to make well-informed recommendations and decisions.
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| E.12. Other changes if any |  | **N/A** |

\* If answered YES to either of these questions will need to inform Institutional Research and get their acknowledgement on the signature page.

## **G. 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 to the current Chair of UCC. Check UCC website for due dates. **Do NOT convert to a .pdf.**

##### G.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 |
| --- | --- | --- | --- |
| Suzanne Mello-Stark | Chair of Computer Science and Information Systems | \*approved by email | 2/23/2024 |
| Rebecca Sparks | Chair of Department of Mathematical Sciences | \*approved by email | 2/23/2024 |
| Quenby Hughes | Dean of Arts and Sciences | \*approved by email | 2/23/2024 |
| Marianne Raimondo | Dean of School of Business | \*approved by email | 2/23/2024 |

##### G.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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