**Computer Science Department**

**Special Topics Course Request Form**

**Instructions**: Complete this form by supplying the information requested in the boxes below. E-mail or send the completed form and any supplemental information to the Computer Science Department, Moscow, ID 83844-1010 or to cs@cs.uiaho.edu. You may also fax the information to 208-885-9052. If approved, the request will be effective only for the semester for which it is submitted.

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| **Contact Information** |
| **Person initiating this request** | **Phone Number** | **E-mail Address** | **Date** |
| Terence Soule | 208-885-7789 | tsoule@cs.uidaho.edu | 7/24/2018 |
| **Proposed instructor** | **Phone Number** | **E-mail Address** |  |
| Terence Soule | 208-885-7789 | tsoule@cs.uidaho.edu | 7/24/2018 |
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| **Course Information** |
| **Title** | Teaching Introduction to Computational Thinking |
| **Course No** | [ ]  CS 404 [x]  CS 504  | **Credits** | 3 | **Semester Offered** | Fall 2018 |
| **Locations Available** | [x]  Moscow [ ]  Boise [ ]  CDA [ ]  Video Outreach | **Delivery Method** |  [x]  Live [ ]  Compressed Video [ ]  DVD [x]  Video Tape [ ]  Web  |
| **C****ourse Description** | Teaching and training strategies for teaching students computational thinking. This course serves two purposes. First, it is an introduction to computational thinking and problem solving, including elementary computing concepts such as variables, loops, functions, lists, conditionals, concurrency, data types, simple object oriented concepts, I/O, events, syntax, structured programming, basic concepts of computer organization, editing and the influence of computers in modern society. Second, it discusses effective (and ineffective) strategies for teaching these topics. This course is specifically designed for the Computer Science endorsement program, and will not satisfy the requirements of other CS degree programs. |
| **Course Type** | X Lecture [ ]  Lab | **Prerequisites** | Graduate student or completed teaching degree |
| **Course Outline** | 1. Scratch
	1. Creating an account (high school issues)
	2. The Scratch programming environment (submitting assignments)
	3. Sprites (objects)
	4. Absolute and Relative commands
	5. “Setting the stage”
	6. Movement (vectors)
	7. Conditionals
	8. Loops
	9. Effects and animation
	10. Sensing
2. NetLogo
	1. Installing (high school issues)
	2. Turtles and patches – comparison to sprites and backgrounds
	3. Syntax (syntax across languages)
	4. Models Library (how to use NetLogo in other high school classes)
	5. Context (helping with debugging)
	6. GUI – setup and run
	7. Basic movement
	8. Breeds
	9. Interactions
3. Processing
	1. Installing (high school issues)
	2. Setup and draw
	3. Relationship to NetLogo and Scratch – similarities and differences
	4. Basic drawing
	5. Variables and movement
	6. Color
	7. Images
	8. Arrays
	9. Objects
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| **R****equired Text** | None |
| **Optional Resources** |   |
| **Student Work** | Assignments, projects *with a pedagogical focus* requiring the development and solution of assignments that would be given in a high school math course, and exams. |
| **Grading** | 20% participation, 30% assignments, 30% project, and 20% exams |
| **Special HW or SW** | [x]  Yes  No  | **Funding Source** | Software is free |
| **TA or Grader** | [x]  Yes No      | **Funding Source** | Dual credit budget |
| **Graduate Course Emphasis Area** | [ ]  Software Architecture [ ]  Hardware Architecture [ ]  Development Process  [ ]  Research Foundations [ ]  CS Theory [x]  N/A |
| **Comments** | This course is one of the required courses for high school teachers working towards an CS endorsement. |

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| **Level of Approval** | **Date Approved** | **Date Denied** | **Signature** |
| **CS Curriculum Committee** |       |       |       |
| **CS Department Faculty** |       |       |       |

1. This form is to be used to propose any special topics course by the CS faculty on the Moscow campus or at any of the U of I resident instruction centers.

2. During the fall and spring semester the Chair of the CS Curriculum Committee will request proposals for the offering of special topics courses during the following semester. The announcement date will be set to allow preparation of proposals by interested faculty, processing of proposals by the CS Curriculum Committee, and voting by the CS faculty as a whole in time for approved courses to be included in the time schedule published by the Registrar. Under extenuating circumstances the committee and CS faculty will consider proposals that have not met the standard timeline for submission.

3. Completed course proposals will be provided to the CS Curriculum Committee for its review. The intent of the committee's review is to ensure that there is an adequate definition of the proposed special topics course and to ensure that the course meets the department’s general academic standards for content and level of offering. The committee will also review a proposed course to ensure that it does not overly duplicate the content of another course. Courses receiving a favorable vote by the committee will be presented to the CS faculty as a whole and will come before the faculty as a seconded motion for their consideration. The review by the CS faculty as a whole is to ensure that the proposed course is consistent with the department’s teaching and research objectives, that sufficient teaching and support resources can be made available, and that offering the proposed course does not adversely affect the department’s ability to meet its other commitments.

4. The special topics course proposal must include the following information:

Contact and Instructor Information:

(1) Name, phone number, and e-mail address of the person submitting the request.

(2) Name, phone number, and e-mail address of the proposed course instructor. If the proposed instructor is not a regular or affiliate faculty member an Instructor Approval Form must be submitted to the department before the the course may be offered.

Course Information:

(1) Provide the course title.

(2) Check the box indicating the course number designation that applies to the proposed course offering.

(3) Indicate the number of credits to be applied.

(4) Indicate the semester in which the course is to be offered.

(5) Indicate the location(s) where the course will be available.

(6) Indicate the delivery method(s) that will be used.

(7) Provide a catalog-level course description.

(8) Indicate the type of course, lecture, lab, or both, that is to be offered.

(9) Indicate the course prerequisites by identifying specific courses that must have been completed prior to enrolling in the proposed course. If specific course prerequisites are not applicable, identify areas of expertise that students must have in order to be successful in the proposed course.

(10) Provide an outline of the course in sufficient detail to enable the faculty to assess the course content.

(11) Indicate the required text and/or other material, including software, you intended to use as the primary resource(s) for students.

(12) Identify optional resources that individual students may wish to obtain.

(13) Provide a general description of the work to be performed by the students (exams, projects, term paper, home work, presentations, programs, etc.).

(14) Indicate your anticipated method of evaluating students for their final course grade, i.e., the percentage of grade based on individual elements of student work.

(15) Identify special hardware and/or software, if any, the university must provide for student and / or instructor use. Identify the proposed source of funds.

(16) Identify if TA or grader resources are required and if so, the proposed source of funds.

(17) For graduate courses identify the emphasis area in which the course resides.

(18) Include any additional comments or explanation that will assist the committee and faculty in evaluating this course proposal.